A STUDY OF TELUGU REGIONAL AND SOCIAL DIALECTS: A PROSODIC ANALYSIS

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September 1987

ABSTRACT

Chapter 1: INTRODUCTION:

A brief introduction of the land, language, people and their occupations and society are presented. The historical, political divisions of the land, influence of other languages on Telugu, and the caste system that exists in Telugu society are explained. The controversy that exists between the traditional school and the modern school in the fields of education and language policy is touched upon.

A survey of earlier work on different aspects of Telugu phonology is given at the start of each chapter. This is followed by my own analyses in terms of prosodic phonology.

Chapter 2: TELUGU PHONEMIC SYSTEMS:

A review of previous accounts of the Telugu phonological system is given and it is shown how each system proposed is inadequate in the circumstances that obtain in the Telugu language today.

Chapter 3: SYLLABLE STRUCTURE AND STRESS:

Stress plays an important role in Sandhi, harmony and rhythm. Word stress is dealt with in this section. Syllable structure is treated along with stress so as to account for loss of syllables, syllable weight and so on. Problems related to social dialects are offered a solution.

Chapter 4: COMPOUND WORDS AND RHYTHM:

Scholars have grouped reduplicative forms, onomatopoeic forms and echo words together with compound noun forms. A new classification of these forms, on the basis of phonetic, phonological and semantic criteria is attempted in this section. The rhythm of compound words is described here.

Chapter 5: HARMONY:

The prosodic treatment of vowel harmony will be seen to be not only more economical but also more complete than previous analyses, i.e. it will cover many nominal and verbal suffixes hitherto unexplored.

Chapter 6: SANDHI:

The term Sandhi is used loosely for various kinds of morphological processes. An attempt is made to show how Telugu scholars gave different interpretations to the Sandhi phenomena. A phonetic-phonological classification of the processes is made and Sandhi rules are presented in terms of prosodic phonology.

Chapter 7: REGIONAL AND SOCIAL DIALECTS - PROBLEMS OF STANDARDISATION:

Speakers are able to choose among alternative linguistic means, any of which would satisfactorily communicate the propositional information. Selection among these alternatives defines the social situations. The question of standardisation is considered.

Phonological systems in terms of prosodic theory are presented so as to account for differences between regional, social dialects and the 'standard' language.

Chapter 8: CONCLUSIONS:

The major findings of the thesis are summarized and discussed.

To

Dr. Bh. Krishnamurti

and

my other teachers

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ACKNOWLEDGEMENTS

> One who describes a language "from the outside", from the standpoint of observer rather than of participant, is free to adopt either the diachronic or the synchronic approach; but one who describes it "from the inside", as it exists for its users, must describe an état de language - a "language-state" with no extension along the time dimension.
>
> (Geoffrey Sampson 1980:37)*

I have tried in this thesis to describe Telugu regional and social dialects as a native speaker from within, and as a student of linguistics from outside. There are those treatments of Telugu which consist of individual topics (as we observe in the survey), but no comprehensive study of regional and social variations in Telugu has been made to date. Prior to my arrival at the School of Oriental and African Studies in October 1984, I had a vague idea of such a topic, which relates the regional and social variations existing in Telugu.

I know no adequate words to express my indebtedness to Mrs. N. Waterson, my supervisor. I owe her all that I am now. It was when I attended her introductory course in prosodic phonology that my vague ideas took concrete shape. Mrs. Waterson spent a tremendous amount of time and effort supervising my work, asking crucial questions and offering constructive criticism, always with much compassion and patience. She has asked me hard questions, and taught me how to think through the answers. She clarified my thoughts, carefully read the earlier drafts and offered numerous editorial suggestions. I feel extremely fortunate to have been associated with her.

The Charles Wallace India Trust selected me for an award to assist in the production of a Telugu-English dictionary, and kindly agreed to my part-time

study for a higher degree during the same period. The Trust was responsible for my academic and living expenses, and also gave me a grant which enabled me to visit Andhra Pradesh during October 1986 to check my data against forty-three subjects. I am grateful to the Trustees for their generosity. During the time I rechecked my data, the Telugu Akademi also helped me with recordings. I acknowledge their help.

I am grateful to Professor R.H. Robins and Dr. T. Bynon, the past and present Heads of the Department of Phonetics and Linguistics at SOAS for their goodwill towards me. The Drs. Bynon were a source of encouragement for me during my stay at SOAS.

For all practical purposes Peter and Peggy (Mr. and Mrs. J.P.L. Gwynn) were my god-parents in the United Kingdom. They lent me their ears and brains whenever I needed them. They were a constant moral support for me, and I offer them my deepest thanks.

An optimistic approach to life is to think - better late than never! But it causes problems in a researcher's personal life. My case is no exception. My wife, Girija, and my sons, Lalit and Vasant, understood my difficulties and co-operated. Of all the blessings I have known, one of the greatest has been their patience, understanding and affection.

I am very grateful to Miss Janet Marks and Mrs. Annette Percy, who took on the arduous task of typing the final manuscript under great pressure of time. Mrs. Susan Harrop has very kindly drawn the map of Andhra Pradesh.

I dedicate this, my thesis, to Dr. Bhadriraju Krishnamurti and my other teachers as a token of reverence. The dedication acknowledges the debt I owe them, but does not discharge it.

*G. Sampson (1980), Schools of Linguistics, Competition and Evolution (Hutchinson, London)

Notations

(1) IPA symbols are used throughout with the following modifications for convenience of typing.

(a) Aspirates are indicated as ch instead of c^h. For example ph represents p^h.

(b) Retroflex consonants are marked as in example ʈ, instead of ʈ.

(2) Broad transcription is used for the spelling pronunciation/written form. Most of the symbols correspond to the IPA. There are some deviations and they are listed below.

Symbols used	IPA
c	tɕ tʂ
j	dʑ
ch	tʃʰ
jh	dʒʰ
k͡s/k͡ʂ	tsʰ/kʂʰ
w	ʋ w
ś	ʃ
y	j

(3) Stress is marked as per the conventions of the IPA. For example ˈCV marks a primary stressed syllable and ˌCV marks secondary stress. Length of vowels is marked with : , whereas consonant length is indicated by geminate consonants. However a single dot following a vowel indicates that the vowel is perceived as long but not as long as a long vowel.

The spelling pronunciations/written forms are underlined throughout the thesis. The phonetic notations given in the text have phonetic brackets, [ ] . When the examples are cited, for the convenience of

typing, the phonetic brackets, [ ], are not given, though the form is in phonetic script.

Phonemes are given in slashes, / /, only in the running text but not in other cases.

Notations

Prosodic Phonology

V vowel (systems) $\dot{V}$ Prosody of short length $\overline{V}$ prosody of long length

C consonant (systems)

ɭ close grade V

ɛ mid grade V

ɑ open grade V

w backness prosody

y frontness prosody

j palatal prosody

ʋ labial prosody

v̲ non-voicing prosody

v voicing prosody

h aspiration prosody

h̲ non-aspiration prosody

n nasal prosody

r rounding prosody

~ alternates with

→ results in

P plosive system

N nasal system

L liquid system

G glide system

F fricative system

S sibilant system

k velar term

c palatal term

ʈ retroflex term

t dental term

p labial term

$\overset{N}{CC}$ nasalisation prosody

$\overset{R}{CC}$ retroflexion prosody

$\overset{\overline{R}}{CC}$ non-retroflexion prosody

$\overset{l}{CC}$ lateralisation prosody

$\overset{\overline{L}}{CC}$ non-lateralisation prosody

$\overset{c}{PP}$ palatalisation prosody

$\overset{g}{CC}$ geminatian prosody

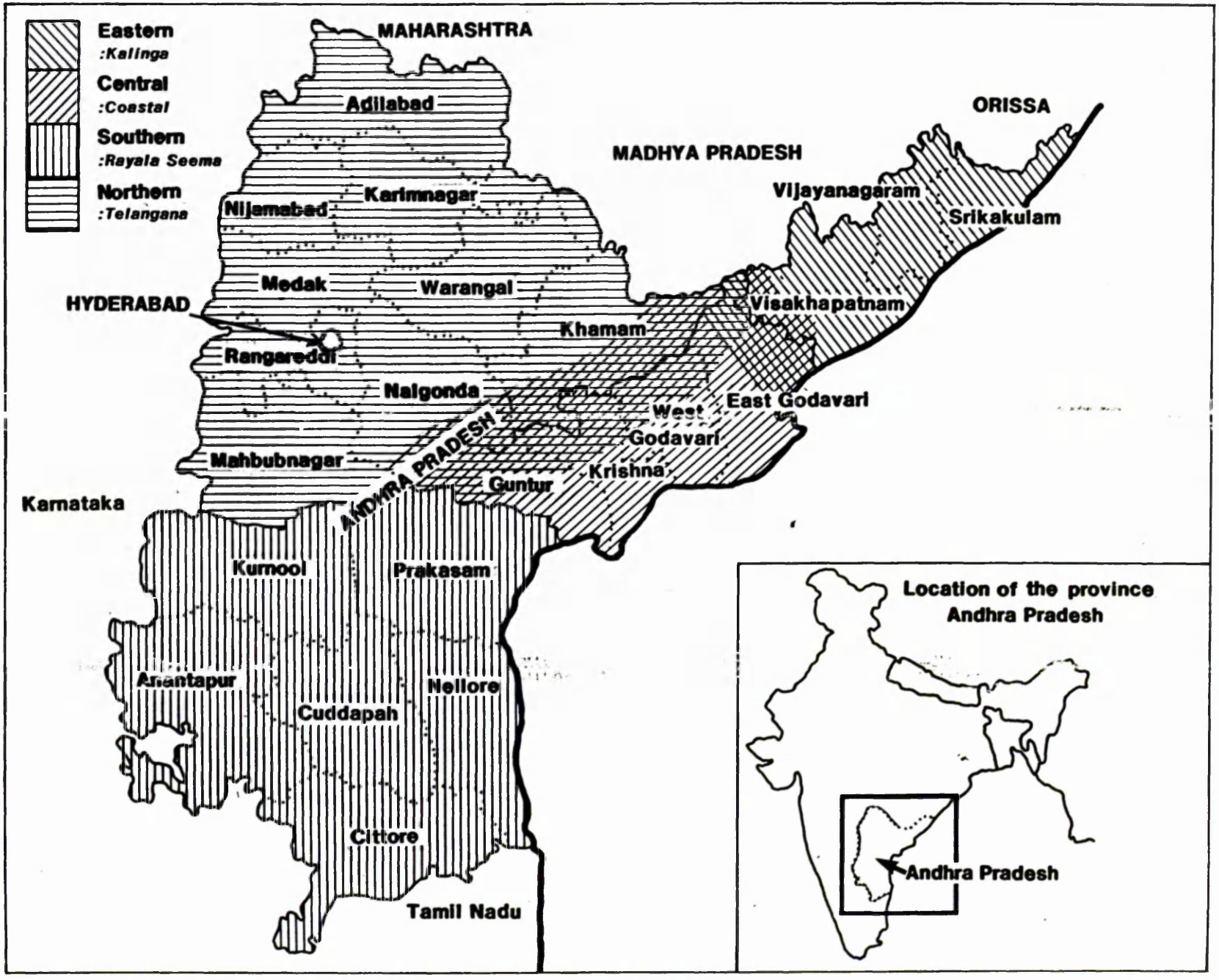
$\overset{\overline{g}}{CC}$ non-geminatian prosody

Abbreviations Used in the Thesis

Journals

BSOAS	Bulletin of the School of Oriental and African Studies
IJAL	International Journal of American Linguistics
IL	Indian Linguistics
JASA	Journal of the Acoustical Society of America
JL	Journal of Linguistics
TPS	Transactions of Philological Society

TABLES AND MAPS



The Regional Dialects of Telugu in Andhra Pradesh

CHAPTER ONE

INTRODUCTION

1.0.0.

The Telugu language is spoken in the Andhra Pradesh State which lies in the south of the central part of the Indian peninsula. The area lies between latitudes 12°14' and ±9°54'N of the Equator, and longitudes 76°50' and 84°50'E of Greenwich.

The word 'Telugu' is of Dravidian origin. In traditional writings we find references to this language under various names, viz., Tenugu, Tenangu, Trilinga, Telaga, and so on. The Sanskrit scholars of ancient times recognised the speakers of this group under the (tribal) name andhra, which later came to stay as a:ndhra. It is evident that the very origin of the name of the language has a two-pronged development, one from the native Dravidian languages, and the other from Sanskrit. Later, we observe that this phenomenon never, in fact, ended there. The development of the language at every stage was subjected to both these influences.

1.0.1.

Andhra Pradesh State and Dialects

The present state of Andhra Pradesh consists of the following twenty-four districts

Telangana (10) districts	Coastal (7) districts	Rayala Seema (4) districts
Adilabad	East Godavari	Anantapur
Hyderabad	Guntur	Chittoor
Karimnagar	Krishna	Cuddapah
Khammam	Nellore	Kurnool
Mahbubnagar	Prakasam	
Medak	Srikakulam	
Nalgonda	West Godavari	
Nizambad	Kalinga (3) districts	
Rangareddi		
Warangal	Srikakulam	
	Vijayanagaram	
	Visakhapatnam	

The four dialect divisions, viz., Telangana, Coastal, Kalinga and Rayala-Seema, are mostly on the basis of the lexicon. Krishnamurti (1962), on the basis of his linguistic survey of Telugu-speaking areas, arrives at the conclusion that there are three dialects in Telugu. Kalinga is grouped with the Coastal dialect for him.

The traditionalists of yesteryear used 'dialect' to cover a variety of linguistic categories, but their main concentration was on lexical and grammatical peculiarities. Scholars of modern times, like Krishnamurti, concentrated on phonetic peculiarities to classify the dialects. As a matter of fact, in Telugu, no attempt has been made to concentrate on all the aspects of language, viz., phonetic, phonological, morphological, syntactic and lexical classes to find out how best the dialect division can be made.

For the purposes of this thesis, I take the three-way dialect classifcation of Krishnamurti. However, at certain places in the thesis, I will explain how Kalinga speakers exhibit their identity.

While society urges linguistic sensitivity, scholars provide evidence for linguistic variation. Linguistic geographers provide data for geographical variation and sociolinguists provide the same for social variations. The underlying factor, language in its true form, holds people together in spite of diverse manifestations goegraphically or socially. It is certain that a prosodic treatment of the language will be able to bring out unity amongst diverse varieties of the language.

1.1.1

Historical Background

Many petty rulers and kings governed the area and it was thus never under a single political territory. In recent past history we find that the

Telugu-speaking area was under two different political entities. The coastal districts were under the British, who governed by the supervision of local feudal lords, and the Rayala Seema and Telangana districts were under the Nizam, a Muslim king of the Asafjahi dynasty, ruling from Hyderabad as his capital. In AD 1800, during the famous Mysore war, the Nizam sought the help of the British army, and won. In return for this favour, as a token of gratitude, the Nizam gave the four Rayala Seema districts to the British government, retaining the Telangana districts for himself. There were five more districts along with the Telangana districts in the then Nizam's dominion, namely, Bidar, Bijapur, Gulbarga, Nanded and Ahmednagar. This situation continued to exist until India became independent in 1947.

1.1.2

Formulation of Linguistic State

The Telugu people were the instigators of the demand for a separate political division in independent India on the basis of language. As early as 1913, they started agitating for a separate linguistic state. The efforts made by them prior to independence were overshadowed by the major task of the independence struggle of the whole country. After attaining independence from Britain in August 1947, the agitation continued, and as a result, the first linguistic state of Telugu speakers under the title visaalaandhra came into being on 1 October 1953. This state comprised only the northern districts of the Madras Presidency, that is to say, only the Coastal and Rayala Seema districts formerly under British rule, and thus formed a separate political entity, leaving behind the Tamil language speakers to the Madras State. Telugu speakers were not satisfied with this. Their persistent demand for the unity of all Telugu speakers led the then central government of India to

appoint a commission which was entrusted with the job of suggesting political divisions of the Indian subcontinent on a linguistic basis. A retired Supreme Court judge, Sir Fazal Ali, was the chairman of the commission. After a careful study of this sensitive issue, the commission formulated certain rules for the creation of linguistic States. Thus, in November 1956, under the reorganisation of the Linguistic States Act, the present state of Andhra Pradesh came into existence consisting of Viśaalaandhra and the Telugu-speaking districts of the Nizam's dominion. In fact, the Nizam's dominion was trifurcated and the remaining two parts were merged with their linguistic neighbours. The Bijapur, Bidar and Gulbarga districts went to the Kannada language-speaking Karnataka State, whereas Ahmednagar and Nanded went to the Marathi-speaking Maharashtra State.

1.1.3

The Language Situation

Right at the beginning of 1953, at the time of the carving out of a State of Telugu speakers, the Government of India took into consideration the socio-economic conditions of the people. Because of natural climatic conditions and lack of educational facilities, the Rayalaseema area was considered as underdeveloped when compared to the Coastal areas. Coastal area speakers were rich and affluent in the society of the country. The Rayalaseema area was chosen as the capital in order to help develop it, and Kurnool became the first capital of the newly formed State, and to pacify the Coastal districts, the High Court was set up at Guntur. Later, in 1956, at the time of the formation of the larger state, the Telangana people felt that because of their socio-economic backwardness, people from the two other areas would exploit them. The Telangana area had undergone several hardships during the Nizam's rule. Urdu and Persian were the official languages. Telugu was

not a recognised language and it was considered as the language of a down-trodden, poor people. The Urdu language and culture exerted a great deal of influence on the Telangana speakers' language and other cultural habits. This impact of alien culture created two categories of Telangana speakers, those who opted to join hands with other speakers of the Telugu language on a sort of cultural emotional integration basis, and those who wished to segregate themselves absolutely for the same reason. To soothe the feelings of the parties concerned and to bring in language integration, the Indian government proposed a 'gentleman's agreement' and Hyderabad city was made the capital of the newly formed Andhra Pradesh State.

Telangana speakers consider themselves as Telugu speakers and always refer to Telugu speakers of the other two areas (the Coastal and Rayalaseema areas) as andhras. They do not consider themselves as andhras. This antagonism to language nomenclature may be for one simple reason. In the language of the Coastal and Rayalaseema regions, in addition to the native vocabulary of Dravidian origin, we find a large number of Sanskrit loans. In some types of vocabulary, the native Dravidian forms are totally replaced by Sanskrit. In the case of the Telangana dialect, which has a considerable amount of Dravidian vocabulary, we find Sanskrit loans reduced in number but we observe a great deal of Urdu and Persian vocabulary. In addition to these differences in vocabulary, there is another psychological aspect which affects the speakers. The Telangana dialect has many new consonant clusters in the spoken form because of the reduction of unstressed syllables, and from close contact, the stress and syllable patterns of Urdu have been adopted by Telangana speakers.

1.1.4

Bilingualism and the Standard Language Problem

The Telugu-speaking districts of Andhra Pradesh State which are on the periphery, have a bordering state where some other language of the Dravidian family or the Indo-Aryan language family is spoken. For example, the Srikakulam district in the north coastal area (Kalinga) borders Orissa State, where the Oriya language of the Indo-Aryan language family is spoken. Vijayanagaram also has some common borders with Orissa. Vijayanagaram and Visakhapatnam districts have common borders with Madhya Pradesh State where Hindi, a language of the Indo-Aryan language family is spoken. Khammam also belongs to this group. Adilabad, Nizambad and Krimnagar share a boundary with Maharashtra State, where Marathi, a language of the Indo-Aryan language family is spoken. Mahabubnagar, Kurnool and Anantapur have common borders with Karnataka, where Kannada, a Dravidian language is spoken. Chittoor mainly, and Nellore partly, have Tamilnadu State at the borders where Tamil, a Dravidian language, is spoken. Nellore, although it has features common to the Coastal dialect, has Sandhi phenomena like the Rayalaseema group. On the eastern side, Andhra Pradesh has the long coast of the Bay of Bengal. A situation of bilingualism is prevalent in the districts which have other languages on their borders. As discussed elsewhere in this thesis (cf. 7.4.9), it may be bilingualism with or without diglossia.

Having considered the districts which lie on the periphery, we are left with some central areas. Of these areas, Warangal and Nalgonda districts in Telangana have a good number of Urdu speakers, as does Cuddapah in the Rayalaseema area. All these three districts, though lying in the central parts of Andhra Pradesh, are considered to be bilingual areas. But, in spite of this factor, the Warangal dialect is considered as a regional standard for Telangana speech and Cuddapah dialect for that of Rayalaseema speech.

Thus only the Prakasam, Guntur, Krishna, and East and West Godavari districts are unaffected by any external language influence. This may be one of the reasons for scholars considering the speech of Coastal districts as the 'standard language'.

The capital city, Hyderabad, is situated in Hyderabad district. It is the smallest district not only in the Telangana area, but in the entire state. It has a 36 per cent Urdu-speaking population. The single largest minority linguistic group in Andhra Pradesh is the Urdu-speaking population, and it numbers around 7 per cent of the total population of the State. At this juncture it is interesting to note that the Telugu language variety used in the capital city of the Telugu-speaking state is not considered as 'standard language'.

All the scholars (of course in the case of Telugu they are in countable numbers) study only the so-called 'standard language', that is, the educated speech of the Coastal dialect. The amount of scholarship devoted to Telangana Telugu and Rayalaseema Telugu is amazingly small. A number of ongoing studies - by the Telugu Akademi Dialect Survey Department - promise to extend this list of Telugu studies.

The Rayalaseema districts are geographically situated on a plateau and because of the hot climate and desert-like terrain, vegetation is scarce. The Telangana districts are underdeveloped because of the lack of interest in developmental activities, shown by the feudal kings of the area in the past. Some districts of Telangana, for example Nizamabad and Warangal, are very fertile. But others, like Medak and Nalgonda, are drought prone. The Coastal districts are very fertile and irrigation facilities are well-developed. As a result, the people there are comparatively rich. Naturally, rich individuals have more say in matters of common interest. This may be another reason why the Coastal speech is considered to be the 'standard language'.

1.1.5.

Development of Education

At the time of independence there were only two universities catering for the needs of the entire area. Andhra University in Visakhapatnam was controlling collegiate education in the Coastal districts, while Osmania University in Hyderabad was responsible for educational development in the Telangana districts. Up to the 1950s, Osmania University gave preference to Urdu and Persian studies. The Rayalaseema districts had no university. They were affiliated to either Madras or Andhra Universities. After independence, in the year 1954, Sri Venkateswara University was established at Tirupati. At present we have eight universities - Andhra University in Visakhapatnam and Nagarjuna University in Guntur (in the Coastal area); Osmania University in Hyderabad and Kakatiya University in Warangal (in the Telangana area); Sri Venkateswara University in Tirupati and Sri Krishnadevaraya University in Anatapur (in the Rayalaseema area), and finally the Andhra Pradesh Open University, besides a central University at Hyderabad.

This above factual survey shows that only Andhra University in Visakhapatnam (in the Coastal area) was initially concerned with studying the modern Telugu language. As a matter of fact, the language faculty in most of the university colleges in the Coastal (and) Rayalaseema (areas), until recently, belonged originally to Andhra University. Visakhapatnam was considered as a seat of learning for Telugu studies during those days. This fact contributes towards a further reason for the Coastal dialect being considered as standard.

The data in Table 1 exhibit the salient features of rate of literacy. The data are based on 1971 census reports.

TABLE 1 : Dialect Areas and Some Relevant Data

Dialect Area	Area in sq.km.	Population	Density per sq.km.	Rate of Literacy %
Telangana	114,863	20,181,085	156	19.15
Coastal	69,369	17,402,635	225	29.42
Rayalaseema	67,299	9,625,931	116	24.38
Kalinga	23,537	6,340.022	Not available	Not available

1.1.6.

The Present Position

We have seen that (i) the Coastal districts are far away from outside influences; (ii) the Coastal people are comparatively rich; and (iii) the Coastal area is well developed in matters of education. When all these three features co-exist, mass communication establishes firm roots. That is exactly what has happened in the case of Telugu. The newspapers, radio, cinema and journals of the whole Telugu-speaking community were managed by speakers from Coastal areas. The users of the language tried to infulence usage and also varieties that exist in other areas. This situation existed in the 1950s and the early part of the 1960s, and prompted Krishnamurti (1957) to observe that the educated speech of the Coastal dialect is what can be considered as standard Telugu. It is also the cause of Sjoberg's (1962) observation that a 'Sanskrit-like' formal style exists in parallel with a relaxed informal style.

The observations of Krishnamurti and Sjoberg are appropriate to those particular times. Now the situation has changed. What I mean to say is that the democratic set-up of the present day has produced neo-groups of speakers of the language who in the past were not in the limelight. The extremely complex ideas about language, education and society of present-day theoretical sociolinguists make the problem more difficult to deal with.

Are we to treat 'literacy' as equivalent to 'education'? In the light of my research, they should not be so treated. If educated speech is going to be different from uneducated, and if we identify certain features of that, we will be disturbed to find that most of the features we claim to be acquired through education (as described by Krishnamurti 1962, cf. 2.1.1) are not, in fact, present in educated speech.

Are we to consider regional dialects and social dialects in the regular day-to-day usage of individual speakers? If we are to consider them, then to what extent?

When we talk of social contexts and context-oriented speech, i.e., registers, one basic question that comes to mind is whether it is the context which is directing the register, or if it is the speaker's effort to project himself as being aware of the context? With these questions in view, we try to solve the problem of observing the 'acts of identity'[1] of the speakers towards the goal, and later we also note the particular phonetic features which are, rather fortunately or unfortunately, prescribed as part of standard pronunciation. Krishnamurti (1962) lists a number of phonetic features which he claims are shared by all educated speakers, irrespective of their region. These features are listed and discussed in Section 7.3.0. My own data do not support this.

1.1.7

Language through the Classical School

Language plays a key role in education. This is an indisputable fact. But the problem is to define the link between language and education and learning. Until the middle of the twentieth century, that is, up to the 1950s, the classical Telugu language was used as a medium of instruction and communication of ideas in the field of education in schools and universities. Classical Telugu has been a literary medium for many centuries. Although there exists a seventh-century inscription of Erukala Potaraju of Erragudi Pādu, the first literary work in Telugu is that of Nannaya, who wrote an

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1. I acknowledge Le Page (1985). I borrow the term as well as the concept of 'Acts of Identity'. However, I do not follow the methodology adopted by him.

epic, the Mahābhārata, in the eleventh century. Most literary works that followed the Mahābhārata were either epics or Purānās, translated from Sanskrit. During the fifteenth and sixteenth centuries there was some original creative verse written, but Telugu prose was not popular as a genre in those times. Such prose as existed was a mixture of prose and verse.

In 1855, the famous Telugu grammarian, Chinnaya Suri, wrote a grammar under the title 'Baalawyaakaraṇamu' (roughly corresponding to 'Grammar for Beginners'). He also wrote a prose work, Niiti candrika ('A Story Book of Morals') which consists of narratives in the form of moral stories in prose. Suri created this prose work in order to explain his own rules of grammar. Suri's grammatical principles are applicable to all forms of verse and prose that existed before his time, and also to those of his own time. Classicists of the modern day cite this as strong evidence in favour of their own argument for the use of classical Telugu as the standard language. One of their arguments is that the classical language has no regional or social variations, whereas the modern language has many types of variations. The proponents of the modernist movement, like, for example, Gidugu Ramamurti and Gurajada Apparao, argued for Śiṣṭa wyawa haarika bhaaṣa (roughly equivalent to modern educated speech) as the standard language. But the handicap for them was that there was no good grammar and no good specimens of prose writings of the modern language. However, an interesting point is that the modernists wanted to 'prescribe' rules for the modern language. In the absence of any modern prose on which to base prescriptive statements, they lost the battle and the classical school won. As a result, up to 1960 the classical language was used in school and college textbooks, and the classical language usage was insisted upon for written examinations and other such situations. All this meant that Telugu children had to do their schooling through the medium of the classical Telugu language which they had to learn just like any other

second language, and this had the effect of delaying their progress.

1.1.8

Modern Telugu

In 1968, the State Institute of Telugu was set up by the Government of Andhra Pradesh. This Institute is also known as the Telugu Akademi. Academies exist in some countries, for instance France and Italy, and it is their duty to prescribe the correct usage of the language concerned. The function of the Telugu Akademi was to establish a modern standard Telugu language, and it similarly undertook the onerous job of prescribing the correct usage of the language which was to be used in college textbooks. These textbooks were intended for the use of students taking courses at junior college and degree college level in the newly introduced Telugu medium of instruction. As a compromise between classicists and modernists, the Telugu Akademi created a new variety of language. Basically this involves the spelling pronunciation of the script combined with the morphology and syntax of each of the three regional dialects.[2] This variety is so unpopular that neither the teachers nor the taught have felicity in its use. The Akademi concedes that this is so in an introductory preface to their 'Akademi language - style sheet' (in Telugu, 1985:iii).

The difference in the language of speech and writing in Telugu is something which needs immediate attention by Telugu Scholars. The morphology and syntax of written language is outside the scope of my present discussion. I find it necessary to restrict my observations to the phonetic features and corresponding graphemes.

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2. Krishnamurti and Gwynn (1985:xxi) refer to this variety as the modern standard Telugu. I have my own doubt about it, as will become clear in the course of this thesis.

1.1.9

Social Dialects of Telugu

The elite of any language-speaking group always consider the form of language which cannot (and should not!) be placed in the conventional written form as an inferior variety, or a mere dialect. Also, tradition has given us the attitude that all those who cannot speak the language of the elite are barbarous and rustic. This type of attitude towards language leads to something which is known as a 'puristic attitude' which is prevalent in the Telugu-speaking community at the present time, hence the favouring of the spelling pronunciation over the various spoken pronunciations.

There are some languages, like English in Britain and America, where judgments are made about 'correct' and 'incorrect' use of the language. This type of 'judgment-giving' attitude prevails in the Telugu situation as far as pronunciation is concerned. As in the case of some other languages (for instance, French and Italian, as mentioned above) Telugu scholars sometimes tend to make presciptive judgments and recognise the spelling pronunciation as 'correct'.

Telugu society is divided into a sizeable number of castes and sub-castes. The Hindu tradition based these divisions on the occupations that each group undertakes, but later the caste system took a different turn which created very many problems for the people. If the problems were restricted to economic, social, religious and such other aspects, the caste problem would have been viewed differently. The main problem that the caste system created lies in the spoken language, and is thus very relevant to my discussion.

In ancient times education (particularly Sanskrit education) was restricted entirely to Brahmin speakers. All other groups were either barred from it, or they themselves opted to keep away from it because of their other occupations. Brahmin speech contained such prosodic features as

aspiration, retroflexion and sibilance, intact, as borrowed or reborrowed from Sanskrit. Other speakers substituted these prosodic features with those that are indigenous to the language. The written forms are loyal to Sanskrit forms (through old Telugu) even today, so the spelling pronunciation has developed as an offshoot of education. Thus an educated individual has two pronunciations in his speech, that is, one that he has acquired because of education, i.e., pronouncing as per the spelling, and the other which is normal in his colloquial speech. Krishnamurti (1962) considers the first one as his basis for social dialect division, whereas Sjoberg (1962) takes the second.

My data present a different picture. Apart from aspiration, there is no other prosodic feature involved where caste plays an important role (cf. 7.5.0).

1.2.0

Goals of the Thesis

For the purposes of this thesis, Telugu dialects are defined in accordance with Ruth McConnell's definition of dialects.[3] McConnell (1979) states that 'A dialect is a subvariety of a language, either regional or social. It is distinguished from other subvarieties of the same language by a unique combination of language features: pronunciation (including stress and intonation); grammatical forms; words and expressions; meanings of words and expressions'.

In this connection, Pringle (1983) observes that two opposed forces are at work in linguistic change. Firstly, there is the principle of imitation. When two speakers interact with one another, each of them tries to adapt his

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3. This definition of Ruth McConnell (1979) is quoted from Ian Pringle (1983: 219)

speech slightly so that the other person can understand better. This in a way is an attempt towards a common form of the language, which may be identified as a standard language. Secondly, there is the principle of impulse to differentiate. When two speakers interact, one of them may try to show how his speech differs from that of the other. Pringle mentions that this is achieved by making use of an artificially elegant language variety, or by exaggerating every sound so that it represents the written form of the language. This type of speech is far removed from the normal day-to-day speech. The other speaker who may be bewildered by this, either keeps away from it, or imitates it and acquires it incorrectly. Thus the social distance of classes is maintained. In the section on stress and syllable (Chapter Three), I have discussed this phenomenon in detail.

When I discuss the features of standard Telugu on lines suggested by Labov (1964), I am aiming at the first principle of Pringle. Under the discussion of acts of identity in the model suggested by Le Page (1985:13-14), I examine the second principle of Pringle.

Chomsky (1965:4) suggests that the primary concern of a linguistic theory is limited to the 'ideal speaker-listener, in a completely homogeneous speech-community'. Cassidy (1986:205) quotes the above statement of Chomsky and argues that while attempting to propose a theory about language, it is necessary to look into language carefully. Chomsky's observation presupposes linguistic variation within speech communities, but at the same time 'un-ideal' data are excluded from its purview. Cassidy points out that such 'un-ideal' data are as relevant as the data that a theoretician makes use of. He observes that variation is intrinsic to language and the theoretician must admit the realities of unidealised language. He argues that it is not for the theoretician to choose the language variety and frame theories, but that his function is to look at the language as it is.

With this intention, I have ventured to discuss the regional and social variations that occur in the Telugu language. I do not plan to look into the morphological or syntactic variations. I am fully aware that segmental phonology does not vary from one dialect to the other to a great extent, but there are some clear markers. It is mostly in the case of prosodic features that dialect variations are found.

In the case of segmental phonological theory, words are analysed first and described next. This shows that analysis and description are two successive steps of a scientific process. In the case of prosodic analysis, I feel that 'analysis and description' are inseparable because each progresses in interrelation with the other.

In the second chapter of this thesis I present a brief survey of the work of earlier Telugu phonologists and discuss why and how I differ from them. In the third chapter I discuss stress and syllable structure. The recognition of the stress prosody in Telugu eliminates many problems hitherto unexplained in Sandhi, vowel harmony,and also in certain social and regional dialect forms. The originally syllable-timed rhythm of the Telugu language is preserved in the speech of Coastal dialect speakers. Rayalaseema-educated speakers use a similar rhythm. This is probably what Mahadeva Sastry (1985:10) means by 'conservative in outlook'. The uneducated speakers of Rayalaseema are slowly drifting towards a stress-timed rhythm, and Telangana speech is mostly of the stress-timed rhythm. Because of these fundamental differences in language melody, speakers of one dialect have some problems in understanding the speech of others. In Chapter Four I discuss rhythm in relation to compound nouns. Vowel harmony is considered in the fifth chapter, and is followed by Sandhi in the sixth chapter.

I do not propose, like earlier scholars, that a modern standard Telugu is to be found in the speech of educated speakers of the Coastal dialect. I give my arguments for not considering a particular regional or social group as trend-setters towards a standard language in the seventh chapter.

Firth (1948, 1973) observes that 'for languages like Tamil and Telugu, it is necessary to assume at least three phonological systems: non-Brahman Dravidian, Sanskrito-Dravidian, and Sanskritic' (ibid.:1). In continuation, he also writes that 'The facts of the phonological structure of such various languages as English, Hindustani, Telugu, Tamil, Maltese, and Nyanja are economically and completely stated on a polysystemic basis'.

Firth (1950:42) writes that the social context is important for language study.

> In the most general terms we study language as part of the social process, and what we may call the systematics of phonetics and phonology, of grammatical categories or of semantics, are ordered schematic constructs, frames of reference, a sort of scaffolding for the handling of events... such constructs have no ontological status and we do not project them as having being or existence. They are neither immanent nor transcendent, but just language turned back on itself.

Also in the seventh chapter of this thesis, a neat pattern of phonological analysis in terms of prosodic phonology is presented, which will account for regional and social dialect variations and the 'common core'.

1.3.0 Brief Introduction to Prosodic Analysis and Its Application in the Thesis

In this section I briefly indicate the prosodic framework within which my analysis will be presented and reference is made to relevant studies made in terms of prosodic theory. I also illustrate how the symbolisation and terms are used in the thesis. More detailed accounts of the theory are available in Robins (1957), Palmer (1970: Introduction), and Waterson (1987: Introduction).

The founder of the prosodic school of phonology was J.R. Firth. Much of his published work and that of his colleagues is available in Firth (1957a), Firth (1957b), and Palmer 1970. Firth (1948, 1970) did not claim that prosodic analysis would make phonological problems appear easier or simpler, but he did suggest that it 'may make the highly complex patterns of language clearer' (in Palmer 1970:25). This may be seen to be true in the publications of Firth's colleagues. One may cite Palmer (1955) who deals with the complex problem of broken plurals in Tigrinya and is able to show a clear relationship between sets of singular and plural forms which had not been shown before. Robins (1953) shows a patterning between grammatical and phonological levels in Sundanese where earlier descriptions had suggested an arbitrary substitution of letters. Waterson's (1956) elegant description of vowel harmony in Turkish consists of a simple relationship between Prosodies and vowel Systems, in contrast with previous accounts which involved a whole series of phonemic alternations. Furthermore, Waterson (1987) through her use of the theory, is able to bring interesting insights to the understanding of speech perception and the acquisition of phonology. The theory thus seems to have a real value for linguistic description, and using it as the theoretical basis for my thesis has enabled me to offer new and more economic analyses of Telugu phonological systems. For instance, in dealing with the complex question of Sandhi which previous writers have described by as many as thirty-three rules (See Chapter six of this thesis), I have been able to cover the whole problem by only six rules.

Firth (1948) makes explicit his aim to make a distinction between syntagmatic and paradigmatic features in phonological analysis. In the theory a distinction is made between 'structure', which in general terms refers to syntagmatic relations and units and involves prosodies, and 'system', which in general terms refers to paradigmatic functions and classes and involves phonematic units. Structure is represented in terms of C and V. Separate C systems and V systems are set up at different places in the structure. This type of description is one of the ways in which the theory is polysystemic. Another aspect in which the theory is polysystemic is in the treatment of loan words as belonging to a separate system from native words. This is clearly illustrated in Henderson (1951). She shows, among other points of interest, how Sanskritic loans in Siamese and Cambodian differ phonologically from the native systems. Sanskrit loans in Telugu similarly are clearly marked from native words having different syllable structures and consonant systems, and attention is drawn to this in the thesis.

Firthian philosophy emphasises the interdependence of the grammatical and phonological levels, that is to say, grammatical classes and boundaries are taken into account in the phonological analysis, so the importance of morphological functions is also recognised in analysis. It will be seen that morphology is taken into account in this thesis when dealing with vowel harmony (see 5.3.0, and later) and Sandhi (6.2.0, and later).

Prosodies

The domain of prosodies may be units such as the syllable, word, phrase or sentence, or their parts. In this connection it is relevant to quote Robins (1957, 1970). He states that prosodies are, 'by definition, of more

than one segment in scope or domain of relevance, and may in fact belong to structures of any length' (in Palmer 1970:192). Henderson's (1949) phonological analysis of Siamese is taken as an example by Robins to illustrate the abstract statement of prosodies:

Sentence prosody:	Intonation;
Prosodies of sentence pieces:	Length, stress and tone relations between component syllables;
Syllable prosodies:	Length, tone, stress, palatalization, labiovelarization;
Prosodies of syllable parts:	Aspiration, retroflexion, plosion, unexploded closure.

(Robins in Palmer 1970:192)).

Features which extend over more than one segment, or units like syllable, word or sentence, are abstracted as prosodies if they have contrastive function or demarcative function (Waterson 1987:12). Syllable structure, stress, rhythm, tone, length, and features such as nasalisation, palatalisation, retroflexion, lip-rounding, backness and frontness, have all been abstracted as prosodies by some linguists. For instance, Allen (1951) deals with retroflexion and aspiration; Robins (1953) deals with nasalisation; features treated prosodically by Henderson (1949) have been quoted above; Waterson (1956) deals with frontness, backness, lip-rounding and non-rounding; and Carnochan (1960) deals with frontness, backness, lip-rounding and non-rounding, as well as tongue-raising and -lowering.

Prosodies are generally represented by superscript symbols, for instance, the contrast of breathiness and non-breathiness at syllable onsets and endings may be represented by h and $\underline{h}$, for example, $^{h}CVC^{\underline{h}}$, that is, breathy syllable onset and non-breathy syllable ending.

The features of syllable structure are also treated as prosodic (Palmer 1970:xii), and are represented in terms of a sequence of C and V units as follows: V, CV, CVC, CVCC, VC. Word structures are represented similarly, and as a sequence of syllable structures, for example, CVCV, CVCVC, VCCV.

Phonematic Units

V systems and C systems and their terms come under this heading. Sub-systems are set up at C and V places, and henceforth these are referred to as systems in the thesis, for instance, sub-systems at C places are referred to as P system, N system, L system, and so on. In order to account for differences within each sub-system, a contrast of terms may be described, as shown under the heading of C systems. V systems may be analysed in terms of grades of openness, for instance, there may be three V grades, viz., ɩ (high), ɛ (mid), and ɑ (low). The V systems may be described in relation to syllable features such as frontness, backness, and neutrality as to frontness and backness, abstracted as prosodies. These may be symbolised as y, w, and ə .

Presentation of Phonological Formulae in the Thesis

Adopting the method followed by Waterson (1987), only the features under discussion are presented in the prosodic formulae. This saves cluttering up the formulae with information not relevant to the particular point being discussed, and brings the particular features under analysis into focus. For example, while discussing monomorphemic vowel harmony, where in a disyllabic word the first syllable undergoes harmony, the representation does not include C systems but only V systems and prosodies, as a consideration of C systems is not relevant. For example:

Educated Speech	Uneducated Speech
'gaṭṭi	gæṭṭi
$C\alpha^{w}CC\iota^{y}$	$C\alpha^{y}CC\iota^{y}$

Here the stressed first syllable ['gaṭ] is w prosodic and the second syllable [ṭi] is y prosodic. In uneducated speech, the first syllable [gæṭ] harmonises with the second syllable [ṭi] in the feature of frontness, and both are marked as y prosodic. Similarly, in suffix harmony only the relevant V systems and prosodies are indicated. The stressed first syllable does not take part in the harmony and what the V system of this syllable is, does not affect the harmony, so it is represented as V. The other V systems take part in harmony and are therefore specified:

'aḍugu + i ——> 'aḍigi 'having asked'

$VC\iota^{w}C\iota^{w} + \iota^{y}$ $VC\iota^{y}C\iota^{y}$

In Telugu nominal forms, the stem induces harmony in the suffix. In the case of nominal suffixes, this is indicated by the absence of a prosody marker on the suffix, here -ni,

ko:ḍi + ni 'hen' (accusative)

$C\bar{V}C\iota^{y} + N\iota$

and the suffixed form of the stem shows the prosody of the stem extended to the suffix. Thus we have,

ko:ḍi + ni ——> ko:ḍini

$C\bar{V}C\iota^{y} + N\iota$ $C\bar{V}C\iota^{y}N\iota^{y}$

In the case of verb roots, the suffix induces harmony, so the prosody of the suffix is marked, and the change of stem prosody is indicated.

Example with suffix -ina $-\iota^{y}CV$: caduwu + ina ——> cadiwina 'read'

$CVC\iota^{w}C\iota^{w} + \iota^{y}CV$ $CVC\iota^{y}C\iota^{y}CV$

Harmony in monomorphemic forms involves vowel height raising and lowering and is treated as V grade harmony; for instance, ɑ may be raised to ɛ; ɪ may be lowered to ɑ. For examples, see p.212. Harmony involving differences in vowel height are treated by Carnochan (1960, 1970) as prosodies of raising and lowering in vowel harmony in Igbo. It would similarly be possible to treat raising and lowering harmony prosodically in Telugu, and some may consider such treatment preferable.

The account that follows of the way the symbolisation and terms are used covers the descriptions of all the different phonological systems of Telugu discussed in the thesis.

Phonematic Units as Described in the Thesis

The C systems and their terms, and the V systems, constitute the phonematic units.

Telugu C Systems

Telugu has the following consonants: three nasals [m, n, ɳ]; two laterals [l, ɭ]; one roll [r]; one retroflex flap [ɽ]; two glides [w, y]; three sibilants [s, ś, ʂ]; one non-sibilant fricative [f], and twenty plosives (see plosive system below).

The C systems that need to be set up to describe the consonant system of Telugu are as follows: P (plosive), N (nasal), S (sibilant), L (liquid), G (glide), F (fricative) (see p.392 onwards in this thesis). The terms of the C system are described under the heading of each system.

Plosive Systems

Telugu has the following plosives: [p, ph, b, bh, t, th, d, dh, ʈ, ʈh, ɖ, ɖh, c, ch, j, jh, k, kh, g, gh]. These are described as belonging to the

P system. In order to account for the five different places of closure, a system of five contrasting terms is set up: p (labial), t (apical), $\underset{.}{t}$ (retroflex), c palatal, k velar). The aspiration, non-aspiration, voicing and voicelessness are accounted for by syllable onset prosodies h, $\underline{h}$ and v, $\underline{v}$ respectively, as shown below.

$\underline{h}\ \underline{v}\ p_p$	exponent [p]	$h\ \underline{v}\ p_p$	exponent [ph]
$\underline{h}\ v\ p_p$	exponent [b]	$h\ v\ p_p$	exponent [bh]
$\underline{h}\ \underline{v}\ p_t$	exponent [t]	$h\ \underline{v}\ p_t$	exponent [th]
$\underline{h}\ v\ p_t$	exponent [d]	$h\ v\ p_t$	exponent [dh]
$\underline{h}\ \underline{v}\ p_{\underset{.}{t}}$	exponent [ṭ]	$h\ \underline{v}\ p_{\underset{.}{t}}$	exponent [ṭh]
$\underline{h}\ v\ p_{\underset{.}{t}}$	exponent [ḍ]	$h\ v\ p_{\underset{.}{t}}$	exponent [ḍh]
$\underline{h}\ \underline{v}\ p_c$	exponent [c]	$h\ \underline{v}\ p_c$	exponent [ch]
$\underline{h}\ v\ p_c$	exponent [j]	$h\ v\ p_c$	exponent [jh]
$\underline{h}\ \underline{v}\ p_k$	exponent [k]	$h\ \underline{v}\ p_k$	exponent [kh]
$\underline{h}\ v\ p_k$	exponent [g]	$h\ v\ p_k$	exponent [gh]

The intervocalic exponent of $h\ v\ p_{\underset{.}{t}}$ is [ɽ], a retroflex flap.

Nasal System

The three nasals [m, n, ṇ] belong to the N system, and the terms to account for the contrasts are p (labial), t (apical) and $\underset{.}{t}$ (retroflex). Thus [m] is represented as N_p, [n] as N_t and [ṇ] as $N_{\underset{.}{t}}$. For examples, see p.398 of this thesis.

Liquid System

A single trill [r] and two laterals [l, ɭ] belong to the L system in Telugu. The terms to account for the contrasts are r (trill), t (apical), and $\underset{.}{t}$ (retroflex). Thus [r] is represented as L_r, [l] as L_t, and [ɭ] as $L_{\underset{.}{t}}$. For examples, see p.399.

Sibilant System

There are three sibilants and the terms to account for the contrasts are t (apical), ʈ (retroflex), and c (palatal). Thus [s] is represented as S_t, [ʂ] as $S_ʈ$, and [ś] as S_c.

Glide System

There are two terms to account for contrasts under this system. They are p (labial) and c (palatal). Thus [w] is represented As G_p and [y] as G_c. For examples, see p.400.

Fricative System

There is only one term under this system, and it is p (labial). Thus [f] is represented as F_p. See p.403 for examples.

Telugu V Systems

A three-grade vowel system is necessary to describe the vowel systems, viz., high - ι, mid - ε, and low - ɑ. The exponents are: ι (closeness of vowel); ε (mid quality of vowel), and ɑ (openness of vowel). These co-occur with features of frontness or backness which are abstracted as syllable prosodies y and w. Thus the following abstractions are made:

$ι^y$ exponent: close front vowel [i]

$ι^w$ exponent: close back vowel [u]

$ε^y$ exponent: mid front vowel [e]

$ε^w$ exponent: mid back vowell [o]

$ɑ^y$ exponent: open front vowel [æ]

$ɑ^w$ exponent: open back vowel [a]

For examples, see pp.395-6.

Telugu Prosodies

The domains of the prosodies in the thesis are:

I. Prosodies of the Word

II. Prosodies of the Syllable

III. Junction Prosodies.

I. Prosodies of the Word

i) Features of stress and rhythm are abstracted as prosodies and these are indicated by stress marks as below: the raised apostrophe marks main stress and the lowered apostrophe marks the secondary stress. The relationship of stress marks the rhythm of the word.

'kudur,cu 'to arrange'

Vowel quantity is abstracted as length prosody. Long length is indicated by a length mark over the V unit of the relevant syllable; short length is left unmarked. For example, śiri: sampada: 'riches' may be represented in general terms as $CVC\bar{V}CVCCVC\bar{V}$, or more specifically, with the V systems marked, as $CVC\bar{\iota}C\alpha CC\alpha C\bar{\alpha}$.

Frontness harmony and backness harmony in monomorphemic words are abstracted as y and w prosodies in a harmonic relationship. An example is given below of harmony in uneducated speech which is not found in educated speech.

Educated Speech	Uneducated Speech	Gloss
ra:tri	re:tri	'night'
$C\bar{\alpha}^{W}CC\iota^{Y}$	$C\bar{\varepsilon}^{Y}CC\iota^{Y}$	
ippuḍu	uppuḍu	'now"
$\iota^{Y}CC\iota^{W}C\iota^{W}$	$\iota^{W}CC\iota^{W}C\iota^{W}$	

In ra:tri (spelling pronunciation and educated speech) the first syllable is w prosodic and the second syllable is y prosodic. In [ɾe:tri] (uneducated speech) both the syllables are y prosodic, the y prosody of the second syllable extends to the first syllable, and there is vowel-raising from α to ε. In the second example, ippuɻu > uppuɻu, w prosody of the second syllable extends to the first syllable in uneducated speech.

ii) Prosodies of Word Onset

Features at the onset of words - labial onglide and palatal onglide - are abstracted as prosodies represented by $\mathcal{V}$ and j respectively. Breathy and non-breathy onsets are abstracted as h and h prosodies. These are prosodies of word onset of V initial words. $\mathcal{V}$, j and h/h also represent junction prosodies marking word boundaries.

Examples:

$\mathcal{V}$ Prosody

wuɻata $\mathcal{V}_{ɻ}{}^{w}$CVCV 'squirrel'

wokaɻi $\mathcal{V}_{ɛ}{}^{w}$CVCV

j Prosody

yekkiɭɭu $j_{ɛ}{}^{y}$CCVCCV 'hiccough'

yekasakkew̃ $j_{ɛ}{}^{y}$CVCVCCV^{nr}

[w] followed by front vowels and [y] followed by back vowels pattern like consonants, and are treated as belonging to the G (glide) system.

h and h Prosody of V Onset Words

These prosodies mark the difference between educated and uneducated speech.

Educated Speech	Uneducated Speech	Gloss
haddu	addu	'border, limit'
$h_{\alpha}{}^{w}CCV$	$\underline{h}_{\alpha}{}^{w}CCV$	

iii) Word-final Prosodies n and r

These are restricted to loans from Sanskrit. The spelling pronunciation has a final N (nasal) system with the p (labial) term, but in colloquial speech the structure is V ending, preserving the nasalisation and labialisation as n and r prosodies.

Spelling pronunciation: wiṣayam CVCVCVN 'subject'

Spoken form: wiṣayaw̃ $CVCVCV^{nr}$

See p.359 for other examples.

II. Prosodies of the Syllable

i) Syllable prosodies y and w as listed for word prosodies. For example, musali $C\iota^{w}C\alpha^{w}C\iota^{y}$

ii) Syllable parts prosodies: features of breath and voice at syllable onsets and endings are abstracted as h and $\underline{h}$ prosodies, and v and $\underline{v}$ prosodies respectively.

h and $\underline{h}$ Prosodies

Prosodies h and $\underline{h}$ account for the contrast of aspiration and non-aspiration of the Telugu plosive system (as shown in the section on the plosive system), as well as for emphasis and absence of emphasis in relation also to other systems, for instance L systems.

Unemphatic Spelling Pronunciation	Emphatic Pronunciation	Gloss
ba:ga	ba:gha	'excessively'
$C\bar{V}\underline{\bar{h}}P\bar{V}$	$C\bar{V}\ {}^{h}P\bar{V}$	
ga:li	ga:lhi	'wind'
$C\bar{V}\underline{\bar{h}}L\bar{V}$	$C\bar{V}{}^{h}L\bar{V}$	

These prosodies, together with the length prosody, also take into account the difference between educated and uneducated speech where educated speech has medial [h] and uneducated speech has a long vowel.

Educated Speech	Uneducated Speech	Gloss
salaha	sala:	'advice'
$CVCV^{h}V$	$CVC^{\underline{h}}\bar{V}$	

Final h prosody in V-ending syllables is restricted to Sanskrit loans. For example:

Spelling Pronunciation	Colloquial Speech	Gloss
duhkham	dukkaw̃	'grief'
$CV^{h}CVC$	$CVCCV^{nr}$	

v and $\underline{v}$ Prosodies

v and $\underline{v}$ prosodies account for the voicing and absence of voicing of the Telugu plosive system (see plosive systems in the earlier part of this section). They also mark the relationship of syllables within the word. Example: ko:ḍi $\overset{v}{C}V\overset{\underline{v}}{C}V$.

III. Junction Prosodies

These are treated under vowel harmony and Sandhi in the thesis and involve two or more structures. For instance, (i) stem and suffix, (ii) syllable and syllable, and (iii) word plus word.

i) Stem and suffix prosodies: voicing - v; non-voicing - $\underline{v}$; frontness - y; backness - w; retroflexion - R over the C symbol, $\overset{R}{C}$, or over the C system symbol, $\overset{R}{L}$; lateralisation - L over the C symbol, $\overset{L}{C}$, or over the C system symbol, $\overset{L}{L}$.

v and $\underline{v}$ Prosodies

These prosodies mark the junction of structures with P-final and P-initial systems.

munaga + ka:ɖa ——> munakka:ɖa 'drunstick'

CVCV^{v}PV + $^{v}_{\iota}$PVCV CVCV$^{v}_{\iota}$PPVCV

(See 6.1.1 for other examples.)

y and w Prosodies

In the case of vowel harmony of stem and suffix, the domain of the prosody is not restricted to the syllable but extends to the syllables of the stem, excluding, however, the stressed syllable.

'kudurcu + ina ——> 'kudircina 'something arranged'

Cι^{w}Cι^{w}CCι^{w} + ι^{y}CV Cι^{w}Cι^{y}CCι^{y}CV

y prosody of the suffix -ina extends over the syllables of the stem 'kudurcu except for the first, stressed syllable (see 5.3.2 for other examples).

Retroflexion Prosody

poraba:ʈu + lu ——> poraba:ʈ$_{\iota}$lu 'mistakes'

CVCVCVP$_{\iota}$ Lι CVCVCVP$^{R}_{\iota}$Lι

Retroflexion and Lateralisation Prosodies

u:ru + lu ——> u:$_{\iota}$lu 'villages'

VL$_{r\iota}$ + Lι $^{-LR}_{VLL\iota}$

ii) Syllable and Syllable Prosodies

y and w prosodic harmony as above; gemination prosodies are noted here. Gemination prosody is marked by g over the CC symbols - $\overset{g}{CC}$.

Gemination Prosodies

There are two functions of gemination:

1) Gemination which marks the relation between spelling pronunciation and spoken forms (see p.72). Example:

Spelling Pronunciation	Spoken Form	Gloss
karpu:ram	kappu:raw̃	'camphor'
CVCCVCVC	$\overset{g}{CVCC}$VCV^{nr}	

2) Gemination which governs the type of junction of noun stem plus plural suffix; $CVC\overset{g}{C}\text{ɻ}$ in contrast with CVCɻ. (See p.311 for examples.)

Example:

putṭi + lu ——> puṭṭlu 'measure of grain'

$CVP_{t}P_{t}\text{ɻ} + L\text{ɻ}$ $\quad CV\ P_{t}\overset{R}{L}\text{ɻ}$

iii) Word-plus-Word Prosodies

Examples for this type can be found in the Sandhi section. Prosodies involved are: retroflexion - R, nasalisation - N, lateralisation - L, palatalisation - c (R, N. L and c are placed over the C symbol or C system symbol), v and v , h/h ,and ʋ and j, have already been mentioned.

Nasalisation and Retroflexion Prosodies

paḍu + nu:ne ——> paṇṇu:ne 'bad oil'

$C\bar{V}^{v}P_{t}V + N\bar{V}CV$ $\quad C\bar{V}\overset{-NR-}{P}\bar{N}VCV$

Lateralisation and Retroflexion prosodies

baḍi + le:du ——> baḷḷe:du 'there is no school'

$C\bar{V}^{v}P_{t}V + L_{t}\bar{V}CV$ $\quad CV\overset{LR-}{P}LVCV$

Retroflexion Prosody

alawa:ṭu + le:du —— alawa:ṭṭe:du 'no habit'

$VCVC\bar{V}^{-v}P_{t}V + L_{t}\bar{V}CV$ $\quad VCVC\bar{V}^{-v}P_{t}\overset{R-}{L}VCV$

Palatalisation Prosody

pa:ta +ceppulu ——> pa:cceppulu 'old shoes'

$C\bar{V}^{-v}P_{t}V + \underline{v}\,P_{c}VCCVCV$ $\quad C\bar{V}\overset{c}{P}_{c}VCCVCV$

v and v Prosodies are as illustrated earlier under syllable prosodies.

CHAPTER TWO

TELUGU PHONEMIC SYSTEMS

2.1.0

Two Phonological Systems

The Telugu language has been analysed by a number of linguists who, in the main, arrived at two phonological systems based on the presence or absence of a particular sociolinguistic variable. This is similar to what was suggested by Firth (1950). I present here a summary of each contribution and the proposed phonemic systems. Phonemic slashes are not used here as the chapter deals with phonemic systems, and is self-explanatory.

2.1.1

Educated and Uneducated Speech - as considered by Krishnamurti

Krishnamurti (1957) proposes two phonological systems for Telugu which are described by him as standard and non-standard. He relates these two varieties to educated and uneducated speech respectively. He describes what he calls 'the phonemes of colloquial Telugu, fairly representative of the educated and middle-class language of the Coastal districts'.[1] The consonantal system is given as follows:

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1. The Coastal districts, considered by Krishnamurti are: Nellore, Guntur, Krishna, East Godavari, West Godavari, Visakhapatnam and Srikakulam. This statement indirectly indicates that he considers the Coastal dialect as the standard form of Telugu.

	Labial		Dental		Alveolar	Palatal		Retroflex		Velar	
Stops	p	ph	t̪					ṭ	ṭh	k	kh
	b	bh	d̪	dh				ḍ	ḍh	g	gh
Affricate						c	ch				
						j	jh				
Spirants		f			s	ś		ṣ			h
Nasals	m				n			ṇ			
Laterals					l			ḷ			
Trill					r						
Semi-vowels	w					y					

Krishnamurti states that to describe the speech of uneducated speakers one may have to eliminate all the aspirated stop phonemes, as uneducated speakers have a tendency to replace aspirated stops by unaspirated stops. For example:

Educated Speech	Uneducated Speech	Gloss
dharmaw̃	darmaw̃	'charity, justice'
bhu:w̃i	bu:w̃i	'earth'
katha	kata	'story'

He also makes an observation to the effect that even among the educated classes, aspirated and unaspirated stops freely alternate with differences in style, emphasis, tempo, etc. For example:

Unemphatic	Gloss	Emphatic	Gloss
pedda	big	pe:ddha	'extremely big'
inka:	still	inkha:	'still more'

The vowel system proposed by Krishnamurti is as follows

i i: u u:

e e: o o:

a a:

He observes that on account of the absence of short /æ/ corresponding to long /ǣ/, he had to treat long vowels as separate phonemes, instead of treating length as phonemic. He suggests an alternative analysis of /i e æ a o u/ and a phoneme of length as /-/, in which case the distribution of /æ/ is to be specified, i.e., occurring only before the phoneme of length.

It is interesting to note that Krishnamurti (1957) excludes [th] from the phonemic system of the Telugu dialect under consideration. He treats [th] as a free variant of /dh/.

Krishnamurti (1962, 1977) notes a marked divergence between the spoken usage of educated speakers and that of uneducated speakers. According to him, in standard Telugu employed by educated speakers, the following features are present:

1. Contrast between aspirated and unaspirated stops (mostly in words borrowed from Sanskrit and Urdu);
2. Presence of [h] in word initial and word medial positions;
3. A distinction is made between the affricates [t͡ʂ] and [t͡ś];
4. [w] occurs in word initial position before unrounded vowels;
5. Retention of consonant clusters;
6. Distinction of three consonant sibilants, i.e., [s], [ʂ] and [ś];
7. Distinction between retroflex and alveolar laterals, i.e., [ɻ] and [l]; and finally,
8. Fricative [f] is maintained in loan words.

In contrast to this, Krishnamurti gives the following features for the non-standard Telugu of uneducated speakers:

1. The distinction between aspirated and unaspirated stops is absent;
2. [h] is absent in all positions;

3. [ʦ] and [ʦ́] merge with [s] and [ś];

4. Word initial [w] is absent;

5. Consonant clusters are simplified either by assimilation or by vowel insertion;

6. Only [s] is present instead of the three sibilants [s], [ʂ] and [ś].

7. Retroflex [ɻ] is not used; and finally,

8. [p] is used for [f] in loan words.

Krishnamurti clearly states that his classification is an oversimplification of a complex linguistic situation involving communication among people of varying social, economic and cultural backgrounds. He then proposes an overall phonemic system for standard and non-standard Telugu. This proposal includes a common core phonemic system which, Krishnamurti claims, is applicable to all Telugu speakers regardless of their regional or social background. He states that the speech of urban educated speakers, irrespective of their caste or community, tends towards uniformity. The overall pattern and common core Telugu phonemic systems, as suggested by Krishnamurti, are given below:

Overall Pattern

Vowels:

i	u	
e	o	(All vowels have long counterparts. Short æ is marginally phonemic.)
æ	a	

Consonants:

p	t	ʈ	c	k
b	d	ɖ	j	g
ph	th	ʈh	ch	kh
bh	dh	ɖh	jh	gh

Consonants (continued):

		t͡s		
		d͡z		
f	s	ʂ	ś	h
	ɣ			
	ɻ	ɭ		
m	n	ɳ		
w̃	w	y		

(w̃ is marginally phonemic.)

From the above overall pattern of twelve vowels and thirty-six consonants, Krishnamurti considers ten vowels and seventeen consonants as representing a common core phonemic system:

Common Core

Vowels:

i	u	i:	u:
e	o	e:	o:
a		a:	

Consonants:

p	t	ʈ	c	k
b	d	ɖ	j	g
m	n			
	s			
	r			
	ɻ			
w		y		

Krishnamurti (1962, 1977) gives phonemic status to [th] which he formerly (1957) did not treat as a phoneme. The following are the differences between the overall pattern and the common core:

1. There are aspirates in the overall pattern but not in the common core;
2. There are affricates in the overall pattern but not in the common core;
3. /f/ and /h/ are not present in the common core;
4. There are three sibilants in the overall pattern but only one sibilant in the common core;
5. There is no retroflex lateral and no retroflex nasal in the common core.

When listing the features that are present in non-standard Telugu, Krishnamurti states that [ts] and [tś] merge with [s] and [ś], but fails to put the second sibilant, namely [ś], in the common core system.

Krishnamurti's account of differences between educated and uneducated speech is disputable. I explain how and why my analysis differs from his in Section 2.2.4, and further in Chapter Seven.

2.1.2

Kelley's Contribution

Gerald Kelley (1959 and 1963) in his phonemic system of Telugu, argues for the treatment of aspirated stops as clusters. His basic assumption is that by recognising them as clusters, the differences between educated and uneducated speech may be regarded as differences in distribution rather than in inventory. The phonemic system that Kelley presents is as follows:

Vowels		Covowels	
i	u	@	central
e	o	:	length
	a		

Consonants

p	t	ʈ	k	
b	d	ɖ	g	
		c	j	
m	n	ɳ		
f	s	ʂ	ś	h
ɣ	l	ɭ		
w			y	

Kelley goes against the traditional approach to the analysis of aspirated stops and the reduction in the number of consonant phonemes does not seem sufficient justification for doing so. The absence of [h] in uneducated speech further strengthens my argument for not treating aspirates as clusters (cf. 2.2.3).

2.1.3

Coexistent Phonemic Systems Proposed by Sjoberg

In her paper on 'Coexistent Phonemic Systems in Telugu', Andrée Sjoberg (1962) draws a distinction between formal and informal styles among educated speakers of Telugu. She labels the attempts to pronounce in the Sanskrit-like manner as formal style, employed by people of high educational and social status in certain situations, such as public lectures. The informal style as opposed to the formal style, is described as a more relaxed speech style employed while speaking to friends of equal status or to inferiors. She makes it clear that the informal style of educated persons is not to be equated with the speech of uneducated speakers. Sjoberg notes in particular the use of aspirated stops and the voiceless spirants, i.e. [s ʂ s̄]. In her data velar aspirates are shown to be absent in the informal style, whereas other

aspirates occur but with reduced frequency. She further states that informal-formal differences in Telugu are apparent in the lexicon and morphology but restricts her attention to the phonology. She observes that there are great variations in the frequency of usage of aspirates, even in the formal style. Her data are based on the speech of an educated informant who is a speaker of the East Godavari dialect (which according to my classification is one of the Coastal dialects).

Sjoberg presents groups of phonemes under phonetic classes. Her analysis of the segmental phonemes of spoken Telugu - educated formal and informal styles - is given below:

Formal Spoken Telugu

Consonants:

Stops:

	Bilabial		Apico-dental			Apico-alveolar				Velar	
	p	ph	t	th	t͡s	ʈ	ʈh	c̆	c̆h	k	kh
	b	bh	d	dh	d͡z	ɖ	ɖh	ɟ̆	ɟ̆h	g	gh

Spirants:

	Bilabial		Apico-dento alveolar	Apico-prepalatal	Labio-prepalatal	Post-velar
	ɸ	f	s	ʂ	ś	h
			z			
Resonants:	m		n	ɳ		
	v		ɹ ɾ	ɭ	ɣ	

Vowels:

i	u
e	o
ɛ	a

Sjoberg includes [ɸ] and [z] as phonemes; these have not been mentioned by other scholars. In addition to a labio-dental fricative, she has a labio-dental approximant as a phoneme, whereas others have a labio-velar approximant.

Informal Spoken Telugu

Vowels:

i u

e o

ɛ a

Consonants:

Stops:	p		t	th	t͡s	ʈ	ʈh	c	k
	b	bh	d	dh	d͡z	ɖ	ɖh	j	g
Spirants:	ʃ	f	s			ʂ		ś	h
			z						
Resonants:	m		n			ɳ			
	v		l	r		ɭ		y	

A comparison of Sjoberg's formal and informal systems reveals that the formal system includes a number of plosives that are absent in the informal system. Sjoberg treats the aspirated stops as unit phonemes. She considers the aspiration resulting from palatalisation as a sub-standard feature. For example:

/pathyɛmu/ ——> /pačhɛm/~/pačem/ 'diet'

/madhyaahnamu/ ——> /ma(d)jhaanam/~/maǰɛṇam/ 'afternoon'

(Sjoberg 1962:271 fn).

Sjoberg observes that bh, th, dh, ʈh and ɖh appear in informal speech, but their frequency is much reduced. She shows that aspiration in certain forms like /bhu:mi/ 'earth', /sabha/ 'council', and /bha:ʂa/ 'language', is retained but is lost in other cases as in /bavanam/ for /bhavanam/ 'building', /bo:janam/ for /bho:janam/ 'meal, food', etc. Of the three spirants /ś, ʂ, h/, she observes that they are preserved as distinct sound classes in informal speech, but with restricted use. She notes that formal ś >informal s or ʂ as in

/śɛ̣truvu/ > /sɛ̣truvu/ 'enemy'

/dɛɛ̣śɛ̣mu/ > /dɛɛ̣sam/~/deeṣam/ 'country'

/śloka/ > /sloka/ 'verse, stanza'

formal ṣ > informal s as in:

/viṣayɛ̣mu/ > /visayɛ̣m/ 'business, enjoyment'

/iṣṭamu/ > /istam/ 'pleasure'.

Sjoberg states that preconsonantal /h/ of formal speech is lost in informal speech, as in:

/čihnamu/ > /činam/ 'mark, sign'

/dukhamu/ > dukam/ 'sorrow'

She compares the more careful /brahma/ 'God' with /bramha/ in informal speech.

Sjoberg thus attributes all such phonological shifts, not to free variation as did others in the field before, but to stylistic alternations that reflect given social situations. To assess these phonological patterns in a correct manner, she resorts to some metalinguistic analysis. At this point tatsamas and tadbhavas are discussed by Sjoberg with reference to Sanskritisation of the Telugu lexicon.[2]

In addition to the phonemic systems of educated formal and informal spoken Telugu, Sjoberg presents an overall phonemic system for the native Telugu vocabulary of both speech styles and another phonemic system for the non-native vocabulary of Telugu. They are presented below:

---

2. Tatsamas are those forms of vocabulary in Telugu which are directly borrowed into Telugu from Sanskrit without any change in form. Tadbhavas are forms which are borrowed from Sanskrit with certain phonetic/phonological changes. In addition to these two types of vocabulary, there are two more types: de:śya, roughly equal to colloquial forms, and gra:mya, rustic.

Native Telugu

Consonants:	p	t	ṭ	c	k
	b	d	ḍ	j	g
		s			
	m	n	ṇ		
	v	l	r	ḷ	y
Vowels:	i		u		
		e	o		
		ɛ	a		

Non-native Telugu

	ph	th	ṭh	ch	kh
	bh	dh	ḍh	jh	gh
f		f	ṣ	ś	h
		z			

(Sjoberg 1962:274).

No mention is made of the distinction between short and long vowels in the native system. In the non-native system the vowel system itself is omitted. It is possible that she did not list the vowels as there is no difference between both the systems as far as they are concerned. Barring /f/ and /z/ which were borrowed into Telugu much later from modern Indo-Aryan languages, Urdu and English, only those sounds adopted from Sanskrit represent the formal style. The presence of /ph/ and preconsonantal /h/, Sjoberg maintains, are purely bookish and found only in highly formal situations.

Sjoberg also claims that the informal phonemic system is least affected by Sanskrit and is less symmetrical, whereas the formal phonemic system is more balanced and much affected by Sanskrit. She considers the rise and persistence of the formal-informal distinctions in Telugu, and concludes

that it is important to take into account the relationships between the written language and the social status (and class) systems, when making a phonemic analysis (cf. 7.5.0).

Sjoberg's analysis centres round the educated man and his speech habits. As she points out (1962:278), an educated man employs two different styles - formal and informal - formal because of his educational background and informal without any such restrictions. Women, Sjoberg observes, have mostly no formal education. She does not specify whether men and women have differences in their speech because of this situation. Her observation with regard to aspirated sounds is disputable. As pointed out earlier, she states that certain forms preserve aspiration and others lose it; but offers no explanation. The explanation for this lies in the syllable structure of the form. Words of two syllables have retained the aspiration whereas words which have more than two syllables have lost it, either in word initial syllable or in word final syllable. So [bh] in [sabha] in the second syllable of the disyllabic word is aspirated, but [bhawanam] is [bawanam] without aspiration. Disyllabic forms have lost their aspiration in the speech of some speakers. For a discussion of stress rules and syllable structure see 3.2.2 onwards.

Sjoberg's observation with regard to formal [ś] > informal [s] is not completely tenable. [ś] in formal Telugu can precede any vowel. But in informal Telugu [ś] is used only before front vowels. Sjoberg's observation that formsl [ṣ] > informal [s] is not adequate as she does not give all the restrictions. Although she correctly states that formal [ṣ] > informal [s] only when it occurs singly, either word initially or intervocalically in medial position, she cites /iṣṭamu/ > /istam/ as an example where [ṣ] is neither word initial nor intervocalic. I am not aware

of this form in my data. The position in clusters is different. In informal speech [ṭ] exists as a phoneme and [ṣṭ] is a homorganic cluster which cannot change in the manner she describes.

Furthermore, Sjoberg's examples for preconsonantal /h/ in formal speech are not supported by my data. The preconsonantal /h/ of Sanskrit was lost in Telugu, possibly because of its occurrence in the initial syllable of Telugu words which are stressed. The strong breath force of stress of the word initial syllable could not, I suggest, phonetically sustain an h-like sound in the syllable final position, and aspiration was therefore carried over to the beginning of the following syllable. Thus we get forms like the following:

cihnam > cinam ~ cihham 'mark, sign'

brahma > bramha 'God of creation'.

More detailed discussion of this can be found in Section 2.2.3.

2.1.4

Lisker's Contribution

Lisker (1963) discusses the Telugu phonemic system in his Introduction to Spoken Telugu, basically a language teaching text. He gives an account of approximately 2,000 lexical items in his discussion of aspiration in Telugu, of which 360 are occurrences of [bh] and 30 of [dh]. Another nine forms of [kh] and two each of [ph], [th] and [ṭh] are listed. Only one example of [jh] is given, but it is attributed to a Sandhi rule. He treats aspirated consonats as unit phonemes. He cites [th] as an independent unit. His phonemic system does not present any sociolinguistic variable. The overall phonemic system which he presents is very similar to other earlier

works, so it is not discussed here. Under the vowel system he has noted /ఌ/ as an independent phoneme.

2.1.5

Krishnamurti and Sarma

Krishnamurti and Sivananda Sarma (1968) in their language teaching manual discuss the Telugu phonemic system briefly. They consider Coastal educated speech as the standard form and make use of it throughout the text. The phonemic analysis is slightly different from Krishnamurti's earlier works. The difference is that they identify alveolar affricates /t͡s/ and /d͡z/ in contrast with palatal affricates /tʃ/ and /dʒ/.

2.1.6

Literary and Colloquial Styles

Sambasiva Rao (1969) in the main agrees with the analysis of the phonemic system made by Krishnamurti, but instead of identifying the two styles as educated and uneducated (as is done by Krishnamurti), he calls them literary and colloquial. The advantages of this nomenclature, if any, are not apparent. Unfortunately, this work was not available to me. My knowledge of it comes from the reference to it made by Reddy (1981:౩౯).

2.1.7

J.V. Sastry (1972, 1975)

J.V. Sastry (1972) presents the following phonemic system for standard Telugu without reference to any sociolinguistic variables:

Vowels

i	ii						u	uu	
e	ee						o	oo	
(æ)		a	aɑ						

Consonants

p	b	t	d	ʈ	ɖ	c	j	k	g
ph	bh		dh	ʈh	ɖh	ch	jh	kh	gh
(f)		s		ʂ			ś		h
m		n		ɳ					
		l		ɭ					
		r							
w							y		

Sastry states that the low front vowel [æ:] has acquired phonemic status marginally in some dialects. /æ/ is always long and has no corresponding short vowel. Sastry argues (1972:16) that [æ] is found only in the dialect of the Coastal districts of Andhra Pradesh and is not present in the speech of either Rayalaseema or Telangana speakers.

Sastry excludes [th] from the consonant system. [f] is noted as a borrowed sound from English and Urdu. Alveolar affricates [t͡s] and [d͡z] are not phonemic for him, and are grouped with palatal affricates [tʃ] and [dʒ].

Sastry (1975) again proposes a similar phonemic system for standard spoken Telugu.

It is proposed to consolidate my earlier analyses (Sastry 1972, 1975) and also to amend some statements in the light of my further research, in the later parts of this thesis.

2.1.8

Jagannath (1981) proposes the following phonemic inventory for Telugu:

Vowels

i	u	ii	uu
e	o	ee	oo
a		aa	

Consonants[3]

p	ph	t	th	ʈ	ʈh	c	ch	k	kh	
b	bh	d	dh	ɖ	ɖh	j	jh	g	gh	h
		s	ʂ		ś					
		n	ɳ							
		l	ɭ							
		r								
w					y					

Jagannath states that 'aspirates and unaspirates vary freely especially in the bilabial, retroflex, palatal and velar series'. He refers to Krishnamurti (1956)[4] in support. He proposes a rule of de-aspiration (optional) as his work is generative phonology oriented. The examples cited by him are not spoken forms, but are only attested in written forms.

Jagannath's analysis contributes no new information about the Telugu phonological systems in question.

2.1.9

Maximum and Minimum Systems of Reddy (1981)

Reddy (1981) proposes a somewhat different phonemic analysis from the earlier scholars who proposed two phonemic systems. She also proposes two

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3. There is no /m/ in the inventory, probably due to a typographical error.
4. I have not been able to obtain this work.

systems, but the major difference in her work is in the nature of the systems. She suggests that Telugu phonology should be described in terms of a maximum system and a minimum system. The maximum system comprises the total range of contrasting segmental phonemes found in the educated, standard and formal speech and incorporates borrowed phonemes as well. She claims that there are some speakers whose speech represents all the phonemes listed in the maximum inventory. However, the majority of speakers do not have all of them. The minimum system forms a part of the maximum system but not vice versa. The minimum inventory comprises those phonemes which are common to all idiolects. In other words, the minimum system represents the absolute minimum number of contrasts necessary for a native speaker. The two systems as proposed by Reddy (1981) are as shown below and on the following page.

It is worth noting that Reddy is the only scholar to treat ai and au as phonemes. Although Sjoberg takes note of [ɲ] she does not give it phonemic status. Reddy includes it in her maximum system, but recognises it along with (t͡s) and (d͡z) as a marginal phoneme.

The minimum system proposed by Reddy, which contains ten vowels, including two diphthongs, and seventeen consonants, is as follows:

Vowels

i	i:	u	u:	
e	e:	o	o:	ai
	a	a:		au

Consonants

p	t	ṭ		k
b	d	ḍ		g
			c	
			j	
	s			
m	n			
	l			
	r			
w			y	

Maximum System (comprises fourteen vowels, including two diphthongs and thirty-six consonants)

Vowels:

i i: u u:

e e: o o: ai

w w: a a: au

(the symbols w, w: are used for ɛ, ɛ:)

Consonants:

		bilabial	labio-dental	dental	alveolar	post-alveolar	palatal	velar	post-velar
plosives	voiceless unaspi.	p		t		ʈ		k	
	voiceless aspi.	ph		th		ʈh		kh	
	voiced unaspi.	b		d		ɖ		g	
	voiced aspi.	bh		dh		ɖh		gh	
affricates	unaspi			(t͡s)		ʈ͡ʂ	c		
	voiceless aspi.						ch		
	voiced unaspi.			(d͡z)			j		
	voiced aspi.						jh		
Fricatives voiceless			f		s	ʂ			h
Nasal voiced		m			n	ɳ	(ɲ)		
Lateral voiced					l	ɭ			
Trill voiced					r				
Approxi. voiced		w					j		

It is worth noting that Reddy is the only scholar to treat ai and au as phonemes. Although Sjoberg takes note of [ɲ] she does not give it phonemic status. Reddy includes it in her maximum system, but recognises it along with (t͡s) and (d͡z) as a marginal phoneme.

Reddy's analysis into a maximum system as opposed to a minimum system projects a confusion. Her maximum system consists of fourteen vowels including two diphthongs. Thirty-six consonants are included in this system, three of which, as noted earlier, have only marginal phonemic function. She disagrees with the setting up of dental affricates /t͡s/ and /d͡z/ as phonemes in contrast with palatal affricates /c/ and /ɟ/, something which is attempted by Krishnamurti and Sarma (1968). She also disagrees with Sjoberg as far as separate phonemic status for [ɽ] is concerned. Reddy bases the phonemic status of [t͡s], [d͡z] and [ɽ] on a small number of subminimal pairs. At the same time she claims that her evidence for [t͡ʂ] as a separate phoneme is stronger as she is able to show that it occurs in loan words, but contrasts with other affricates in educated speech in minimal pairs like:

[ci:ra]	'saree'	[pacci]	'raw'
[t͡ʂi:ra]	'milk'	[pat͡ʂi]	'bird'

To my knowledge [t͡ʂi:ra] is not used for 'milk'; it is an old Sanskrit form which does not occur in Telugu, and I know of no other minimal pairs (see 7.3.0 for the status of [t͡ʂ]. In the case of the other set of examples, I have data to show that [kʂ] occurs in the case of [pakʂi], which is a loan word, as noted by Reddy.

Reddy has not explained any variable which forms the basis for her maximum-minimum system classification. The maximum system is an overall pattern of the Telugu language, as I understand it, including the borrowed phonemes. It is not claimed by her, and of course it is not feasible to do so, that this system exists in any particular group of speakers. The minimum system, however, is the one which exists, as per her claims, in the speech of all speakers. This appears to be on the lines of the 'common core' suggested by Krishnamurti.

2.1.10

The most recent analysis known to me is that of Mahadeva Sastri (1985). He presents a phonemic system of Telugu as follows:

i	ī		u	ū
e	ē		o	ō
		æ ɑ ā		(eleven vowel phonemes)

p	t	ṭ	c	k
ph		ṭh	ch	kh
b	d	ḍ	j	g
bh	dh	ḍh	jh	gh
m	n	ṇ		
f	s	ṣ	ś	h
	l	ḷ		
	r			
v			y	(thirty-two consonant phonemes).

He considers the Coastal educated dialect as standard Telugu, and claims that his speech represents the same. The phonemic system presented by him pertains to this dialect. His analysis is identical with that of Krishnamurti (1957), so does not require further discussion.

2.2.0

Introduction of Caste as a Parameter

In addition to these contributions, the Telugu Akademi dialect bulletins also need to be taken into account. The dialect bulletins present very good sociolinguistic data, and the field investigators in their regular survey provided an added dimension to the language behaviour. Hitherto the parameters, besides regional variations, have been only those for formal

versus formal, native versus non-native, educated versus uneducated, standard versus non-standard, literary versus colloquial, but the survey investigators have the dimension of caste added. The claim is that upper caste speakers preserve certain forms (as indicated by 'educated speakers' of Krishnamurti and 'formal speech' of Sjoberg) whereas all other castes do not maintain them.

2.2.1

Variables Requiring Consideration

From the foregoing sections it is seen that some of the scholars who worked on Telugu phonology have presented two different phonemic systems for Telugu, each under the plea of one sociolinguistic variable or another, but unfortunately all failed to arrive at a comprehensive solution which takes care of all the relevant variables together: the geographical distribution of dialects, educational status of speakers, stylistic variations, and caste markers. All of us are aware of the fact that language is not a watertight compartment and that it is susceptible to various changes. Language seepage takes place in all the above-mentioned social situations. After a careful and close study of the problem, I propose a solution in terms of prosodic phonology to describe all the styles of the Telugu language.

Scholars in the past have presented phonemic systems for the so-called standard language. What is standard Telugu? This question has not been answered satisfactorily by anyone as yet. I attempt to answer the same in Chapter Seven of this thesis.

2.2.2

Data used in the Thesis and Choice of Theoretical Approach

The two scholars who present two phonological systems for Telugu

by including a sociolinguistic variable are Krishnamurti and Sjoberg. Sambasiva Rao, it seems, also tried to do so, but as I am not in a position to get his work, I am not able to consider it here. Because of its very general nature, Reddy's (1981) analysis is not considered further. It is now proposed to analyse the data from four different regional (or geographical) dialect zones and subject them to a thorough checking as against the variables proposed by Krishnamurti and Sjoberg. The caste feature, which has not previously been taken into account, will be included. For my analysis I make use of data which I collected during fieldwork between 1968 and 1977, and some personal notes; I also make use of the data published by the Telugu Akademi in their dialect bulletins. I was, in fact, myself involved in the dialect survey of the Telugu Akademi and data collected by me is included in at least two of the published bulletins.[5] The data in general provide a great deal of evidence for features of educated and uneducated speech, but are very meagre with regard to formal and informal speech. In order to fill in gaps in the data, I undertook an informal survey during October 1986 in Andhra Pradesh with a small number of subjects. The data that I collected can be classified as follows (the figures indicate the number of subjects):

1. Caste

   Brahmins - 5

   Non-Brahmins - 6

   Christians - 3

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5. Telugu Dialect Bulletin, Series I (Karimnagar district) 1971; Telugu Dialect Bulletin, Series IV (Guntur district) 1972, editor, B. Radhakrishna, Telugu Akademi, Hyderabad.

2. Region

   Telegana - 3

   Coastal - 6

   Rayalaseema - 3

   North Andhra - 2

3. Subjects

   Telugu teachers - 4

   History teachers - 3

   Science teachers - 4

   Mathematics teachers - 3

4. Sex

   Men - 12

   Women - 2

All the fourteen subjects are college teachers and are well qualified. All are holders of postgraduate degrees.

I have thus three sets of data, viz., personal collection, Telugu Akademi bulletins, and recent field trip. I also make use of my own knowledge as a native speaker of Telugu. I represent the Coastal dialect as my speech reflects the same, and I am also well versed in the Telangana dialect. In the following sections of this chapter, I shall analyse the data referred to above, and will discuss various features in detail, viz., aspiration and types of aspiration; the presence of [h] in word initial and medial positions; the presence of [w] in word initial position; the presence of affricates; the retention of consonant clusters; sibilant distinctions; the retention of [kṣ]; the retention of retroflex [ɭ] and [n]; the retention of fricative [f].

The final phonological analysis will be presented in the following way: I will present a phonological system in terms of prosodic theory based on the spelling pronunciation which will be used as a common coγe to which the other varieties will be related. This type of approach has been chosen because it makes the exposition very much simpler and clearer, and a great deal of repetition can be avoided in this way (see 7.5.0).

2.2.3

Aspiration

Aspiration has been defined generally as 'an extra puff of air' or 'breath' following the release of stricture. Heffner (1950:120) defines it thus: 'If the release is impulsive or sudden, the rush of air out of the stopped cavity may be vigorous and puff-like...stops which have this puff are called aspirated, stops which lack it are called unaspirated'.

Aspiration is a feature borrowed from Sanskrit into the Telegu system. Sjoberg points out that it is only the Sanskrit-like pronunciation of Telugu speakers in formal speech which has maintained aspirated sounds. However, my data show that formal speech has also started losing aspiration as a distinctive feature. The Sanskrit vocabulary of formal speech is either totally replaced by native forms or simplified in order to avoid aspirate sounds. Krishnamurti's educated / uneducated parameter may also not be very useful for the reason that educated speakers tend to lose aspiration in both formal and informal styles. Thus the crucial question is how far is it correct to identify aspiration as a distinguishing feature between educated and uneducated speakers, formal and informal styles, and native and non-native systems. As pointed out earlier by me, Krishnamurti (1957) analysed [th] as a free variant of /dh/ and did not assign phonemic status to it. Lisker (1963)

however, treated [th] as an independent phoneme, but in his account of approximately 2,000 lexical items only two forms each of [ph], [th] and [ʈh] are observed. He cites one case of [jh] and fails to mention anything about [ɖh]. This leads us to the conclusion that in spoken Telugu the aspirate sounds are less frequent, particularly in the case of aspirated retroflex and palatal sounds. They are retained in the speech of some speakers who still retain the Sanskrit vocabulary in their day-to-day speech. It may be pointed out at this juncture that those speakers who preserve aspiration are not necessarily confined to the educated class or to the formal style. As noted by the field survey of the Telugu Akademi, especially in the case of the Guntur dialect, it is the caste factor which may be considered as the major variable. Aspiration as a distinctive feature is present in the middle- and upper-class brahmin speech of the Coastal dialect, and elsewhere it is lost.

With this background I would like to present an account of various sources for aspirated consonants in Telugu. If we are able to identify the sources and their usage by the speakers, that would pave the way towards the demarcation of regional and social dialects.

My data suggest the following different sources for aspirated consonants in Telugu:

a) Those aspirated forms which are loyally borrowed from Sanskrit in the formal style of the educated class;

b) Aspirated forms which entered into the system because of palatalisation and gemination, and

c) Aspiration introduced to emphasise a word.

These sources of aspiration and their importance in identification of social and regional dialects are discussed in Section 7.3.0. The aspiration which is used for emphatic stress is discussed under Section 3.2.3.

At this point it is necessary to mention that in a total of one hundred vocabulary items which I checked with my informants mentioned above, the following results were obtained:

Word Initial Aspirated Consonants

		Formal Speech	Informal Speech
1.	Educated	✓	-
	Uneducated	-	-
2.	Brahmin	✓	✓
	Non-Brahmin	✓	-

Word Medial Aspirated Consonants

1.	Educated	-	-
	Uneducated	-	-
2.	Brahmin	✓	-
	Non-Brahmin	-	-

The order of frequency of usage of the aspirate sounds in speech is as follows, starting with the most frequent:

kh, gh, bh, dh, ph, ṭh, ch, jh, ḍh, and th.

It is noticed that Rayalaseema speakers make use of /th/ as an independent phoneme in contrast with /dh/. In remaining dialects /th/ is merged with /dh/. In the Telangana area aspiration is less common.

This is slightly different from Lisker's observation (cf. 2.1.4). For him the order is [bh], [dh], [kh], [ph], [th] and [ṭh]. My observation is based on a sample word-list checked at the high school level, and the subjects are teachers as well as students.

2.2.4

Presence of [h] in Word Initial and Medial Positions

Word initial [h] is mostly confined to borrowed vocabulary in Telugu. Word medial [h] is partly due to the reduction of the aspirated velar plosive in medial position in borrowed vocabulary. Prosodic formulae are given to show the breath and non-breath relationships of the words in educated and uneducated speech.

Spelling Pron.	Educated Speech	Uneducated Speech	Gloss
mukham	muKhaw̃	muhaw̃	face
C $V^{\underline{V}h}$ P V N	C $V^{\underline{V}h}$ P V^{nr}	C V^{h} V^{nr}	
sukham	sukhaw̃	suhaw̃	pleasure, happiness
C $V^{\underline{V}h}$ P V N	C $V^{\underline{V}h}$ P V^{nr}	C V^{h} V^{nr}	

It is also derived from medial voiced or voiceless velar stops. For example:

ika	iha	iga	hereafter
$V^{\underline{V}h}$ P V	V^{h} V	$V^{\underline{V}h}$ P V	
sagam	saKaw̃	sagaw̃	half
C V^{Vh} P N	C V^{h} V^{nr}	C $V^{\underline{V}h}$ P V^{nr}	

Where Spelling pronunciation and uneducated speech have h prosodic Syllable onsets, educated speech has h prosodic Syllable onsets. [h] in word initial position is lost in uneducated speech, but is maintained in the formal style of educated speakers. The loss of word initial [h] is observed in the majority of speakers. But one interesting point to note is that all speakers look to this feature as a symbol of prestige, unlike the case of the aspirated plosives. Some educated speakers preserve [h] in formal speech, but not in informal speech. The following examples illustrate the situation in Telugu:

mukham 'face' ——> muhaw̃ (edu.informal) C V ^{h} V ^{nr}

mugaw̃ (unedu. formal and informal) C V$^{h}_{=}$ P V^{nr}

sagam 'half' ——> sahaw̃ (edu.informal) C V ^{h} V^{nr}

sagaw̃ (unedu. formal and informal) C V$^{h}_{=}$ P V^{nr}

In both informal and formal styles of uneducated speech and in the informal style of educated speech, when intervocalic [h] is lost there emerged a long vowel, as in the examples given below. The contrast is shown prosodically.

maha 'great' > ma: (edu. and unedu.)

C V^{h} V C$^{h}\bar{V}$

rahada:ri 'way' > ra:da:ri (edu. and unedu.)

C V^{h} V C $\bar{V}$ C V C$^{h}\bar{V}$ C $\bar{V}$ C V

Educated speech has the following features to offer with regard to word medial [h]:

a) Word medial [h] of borrowed vocabulary is retained in the formal speech of educated speakers, and

b) Word medial [h], which has developed as a result of simplification of aspirated sounds or otherwise, is retained in the speech of educated speakers, in both the styles, i.e., formal and informal.

In view of these facts, it is necessary to treat this feature as a marker of educated speech, as opposed to uneducated speech.

2.2.5

Presence of [w] in Word Initial Position

Before word initial back vowels, [w] occurs as an onglide in Telugu. Word initial [w] before front vowels is also possible in the language. Krishnamurti mentions the dropping of word initial [w] as a feature of uneducated speech, the same as word initial [h] and medial [h].

My analysis disagrees with this view of Krishnamurti. In the data analysed by me, many of the people who do not preserve word initial [w] are from the educated class.

The presence of [w] in word medial position needs careful analysis. I shall present some data to illustrate contexts where [w] undergoes change. The analysis is in terms of prosodic phonology. Syllable prosodies are w, y. Syllable onset prosodies v, j.

1. In disyllabic forms when [w] occurs in the second syllable, there is no change except that there is a possible alternative with [y] in a y prosodic syllable.

Educated		Uneducated	
ba:wi	——→	ba:yi	'well'
$C\ \bar{V}\ G_p\ V^y$	——→	$C\ \bar{V}\ G_c\ V^y$	
ma:wi	——→	ma:yi	'ours'
$C\ \bar{V}\ G_p\ V^y$	——→	$C\ \bar{V}\ G_c\ V^y$	

But we also have forms like:

ba:wa	——→	ba:wa	'brother-in-law'
$C\ \bar{V}\ G_p\ V^w$	——→	$C\ \bar{V}\ G_p\ V^w$	
a:wu	——→	a:wu	'cow'
$\bar{V}\ G_p\ V^w$	——→	$\bar{V}\ G_p\ V^w$	

The forms given above are the same in educated and uneducated speech.

2. In trisyllabic forms when [w] occurs in the second syllable, there is the possibility of a loss of [w] and a loss of syllable and the use of [y], that is, c term replaces p term of G. For example:

Spelling Pronunciation	Spoken Form	Gloss
pa:wala:	pa:la: paɟlɛ:	'quarter of a rupee'
C V̄ G_p ɑ^w C V^w	C V^w C V^w C V^w G_c C V^y	
ka:wali	ka:ɟili ka:wli	'guard'
C V G_p V^w C V^y	C V^w G_c C V^y C V^w G_p C V^y	

The spelling pronunciation keeps [w] but in informal pronunciation there are two possibilities, as shown above. These are found in both educated and uneducated speech. Other variables like caste are not significant.

3. In trisyllabic forms when [w] occurs in third syllable, there is a reduction in the number of syllables, and there is vowel length with ɭ syllables, and labialisation is maintained.

Spelling Pronunciation	Spoken Form	Gloss
aruwu	aru:	'credit'
V C ɭ^w G_p ɭ^{wr}	V C ɭ̄^{wr}	
baruwu	baru:	'weight'
C V C ɭ^w G_p ɭ^{wr}	C V C ɭ̄^{wr}	

In the case of ɑ syllables, there is no vowel length, but the labialisation of [w] is maintained as a syllable prosody.

Spelling Prununciation	Spoken Form	Gloss
paɣawa	paɣɔ	'boat'
C V C ɑ^w G_p ɑ^{wr}	C V C ɑ^{wr}	
kaɣawa	kaɣɔ	'earthen pot'
C V C ɑ^w G_p ɑ^w	C V C ɑ^{wr}	

From the examples given, it is clear that [w] in medial position is generally not dropped in either educated or uneducated speech, other than in 3. above, but there labialisation is still maintained as a syllable prosody. In the case of 3., educated formal speech may have [w], but in informal speech it is lost, but labialisation is retained as the rounding prosody r.

This leaves us only with word initial position as in the following examples.

4. [w] before front vowels corresponds to a palatal onglide [y], In non-standard forms, spelling pronunciation has W prosodic onset of y prosodic syllables. Corresponding to these forms in spoken forms of non-standard speech, we have j prosodic onset of y prosodic syllable. This is clear from the following examples:

Spelling Pronunciation	Spoken Form	Gloss
wɛnnela	^{y}ennela	'moonlight'
$G_p\ \varepsilon^{y}$ C C V C V	$^{j}\varepsilon^{y}$ C C V C V	
wɛlturu	^{y}elturu	'light'
$G_p\ \varepsilon^{y}$ C C V C V	$^{j}\varepsilon^{y}$ C C V C V	
we:ɖi	ye:ɖi	'heat'
$G_p\ \bar{\varepsilon}^{y}$ C V	$^{j}\bar{\varepsilon}^{y}$ C V	
wi:pu	^{y}i:pu	'back' (of the body)
$G_p\ \bar{\imath}^{y}$ C V	$^{j}\bar{\imath}^{y}$C V	
wi:ɖu	^{y}i:ɖu	'this fellow' (proximate)
$G_p\ \bar{\imath}^{y}$ C V	$^{j}\bar{\imath}^{y}$ C V	
willu	^{y}illu	'legal will'
$G_p\ \bar{\imath}^{y}$ C C V	$^{j}\imath^{y}$ C C V	

5. [w] before long vowel [a:] is lost completely, but labialisation may be retained as a syllable prosody.

Spelling Pronunciation	Spoken Form	Gloss
wa:ɖu	a:ɖu ~ o:ɖu	'he'
$\mathfrak{v}\,\bar{\alpha}^{w}$ C V	$\bar{\alpha}^{w}$ C V ~ $\bar{\varepsilon}^{wr}$ C V	
wa:kili	a:kili ~ o:kili	'door'
$\mathfrak{v}\,\bar{\alpha}^{w}$ C V C V	$\bar{\alpha}^{w}$ C V C V ~ $\bar{\varepsilon}^{wr}$ C V C V	
wa:sana	a:sana ~ o:sana	'swell'
$\mathfrak{v}\,\bar{\alpha}^{w}$ C V C V	$\bar{\alpha}^{w}$ C V C V ~ $\bar{\varepsilon}^{wr}$ C V C V	

It is observed that in these types of forms, word initial $\mathfrak{v}\bar{\alpha}^{w} > \bar{\alpha}^{w}$ or maintains w prosody but has an additional r prosody, and a change of v grade, $\bar{\varepsilon}^{wr}$.

6. [w] before short vowel [a] is pronounced as [^{w}o] or [o], i.e., labialisation is maintained as a syllable prosody, r.

Spelling Pronunciation	Spoken Form	Gloss
waɖiyaw̃	^{w}oɖiyaw̃	'a type of cake'
$\mathfrak{v}\,\alpha^{w}$ C V j V^{nr}	$\mathfrak{v}\,\varepsilon^{wr}$ C V C V^{nr}	
wala	^{w}ola	'net'
$\mathfrak{v}\,\alpha^{w}$ C V	$\mathfrak{v}\,\varepsilon^{wr}$ C V	
warasa	^{w}orasa	'row'
$\mathfrak{v}\,\alpha^{w}$ C V C V	$\mathfrak{v}\,\varepsilon^{wr}$ C V C V	
waɖisela	^{w}oɖisela	'sling'
$\mathfrak{v}\,\alpha^{w}$ C V C V C V	$\mathfrak{v}\,\varepsilon^{wr}$ C V C V C V	

Speakers select the standard forms and non-standard forms on the basis of situational demands, i.e., formal, informal situations, as necessary.

2.2.6

Presence of Affricates

As Sjoberg (1962) shows, the apico-dental affricated stop phonemes /t̪s/ and /d̪z/ are found only before back vowels and were, in the past, allophones of the apico-alveolar affricate stops /tʂ/ and /dʐ/. The alveolar affricate stops had a restricted distribution, i.e., occurring before front vowels. The Sanskrit borrowings into the language made this system change whereby /t̪ʂ] and]d̪ʐ] also occur before back vowels. The difference that existed in the orthography vanished gradually in the spoken forms. As a result of this, there came into being a contrast between [t̪s] and [tʂ] and [dʒ] and [dʒ]. Krishnamurti (1962) noted this as a feature for the identification of differences between educated and uneducated speech. His reasoning seems to be that as Sanskrit borrowings occur in educated speech, educated speakers maintain the distribution, but my data do not support this.

On the contrary, the presence of [t̪s] and [d̪z] may be treated as a marker of geographical dialect division. It is not a marker of educated versus uneducated, or formal versus informal, or literary versus colloquial, but it is based on the region to which the speaker belongs. The dental affricate stops are found only in the Coastal dialect. They are not present in other dialects in either educated speech or uneducated speech. It is precisely for this reason that Krishnamurti and Sarma (1968) treated the dental affricate stops as marginal phonemes. Reddy (1981), however, considers them under her maximum phonemic systems.

2.2.7

Retention of Consonant Clusters

This feature cannot be attributed to any particular group of speakers. Word initial clusters are not found in words of native Telugu origin. In modern Telegu, which is an admixture of Sanskrit lexicon and Telugu lexicon, two types of word initial clusters occur. (1) The first consonant is a stop or nasal and the second consonant an approximant or tap, and (2) the first consonant is a spirant and the second a stop or nasal or liquid. Both these types are of Sanskrit origin and are used only in spelling pronunciation.

Form	Spelling Pronunciation	Spoken Form	Gloss
i) Stop + tap	kr̥amam	kemaw̃	'row'
	gra:mam	gɛmaw̃	'village'
	pre:ma	pe:w̃a	'love'
	tre:ṇupu	te:nupu te:pu	'belching'
ii) Stop + approximant	twaraga:	toraga:	'quickly'
	tya:gam	tɛgaw̃ cɛ:gaw̃	'sacrifice'
iii) Nasal + tap	-	-	
iv) Nasal + approximant	nya:yam	nɤ:yaw̃	'justice'
v) Spirant + stop	sparśa	sorsɛ	'touch'
	stha:nam	ta:naw̃	'place'
vi) Spirant + nasal	sna:nam	ta:naw̃ sta:naw̃	'bath'
vii) Spirant + approximant	śya:mala	sɤmala	'a proper name'
viii) Spirant + tap	śrota	so:ta	'listener'

It is worth noting that in uneducated speech words which have spirant initial clusters are not generally used. The speaker may replace the word with a more native form instead.

In general, in the case of retention of word initial clusters, as already mentioned at the beginning of this section, it is very difficult to attribute the feature to any particular group. However, one may generalise and say that in educated speech, word initial clusters are retained only in formal situations, whereas in uneducated speech they are either replaced or totally absent.

Word medial clusters differ from word initial clusters and can more suitably be called consonant combinations as they are spread over two syllables. Word medial consonant combinations in native forms are of the following types:

Form	Spelling Pronunciation	Spoken Form	Gloss
Stop + stop	raktam	rattaw̃	'blood'
Stop + nasal	agni	aggi	'fire'
Stop + liquid	wiplawam	ʸipalawaw̃	'revolution'
Nasal + nasal	j̇anma	j̇anama	'birth'
Nasal + liquid	a:mlam	a:w̃əlaw̃	'acid'
Tap + stop	karpu:ram	kappu:raw̃	'camphor'
Nasal + approximant	anya:yam	annɛ̣:yaw̃	'injustice'

A close observation of medial consonant combinations in native Telugu brings out the fact that (i) if the two consonants are plosives, the place of articulation of the plosives is the same, being that of the second plosive of spelling pronunciation, e.g., [rattaw̃] 'blood' C V P P_t V^n (dental place) where the spelling pronunciation is [raktam= C V P_k P_t V^n; (ii) if the two

consonants are: plosive + any other consonant, there may be syllabic separation of the consonants, e.g., [ʸipalawaw̃] V C V C V^{w} V^{nr} when the spelling pronunciation is [viplawaw̃] C V C C V^{w} V N. Separation of the consonants in this case does not reflect the educational status of the speakers, nor is it due to the formal-informal situation. My data show that the phenomenon occurs in the speech of educated and uneducated speakers alike, but in different ways. In the case of educated speakers, consonants are separated by means of a vowel.

Form	Spelling Pronunciation	Spoken Form (educ.)	Gloss
Tap + nasal	karma	karama	'fate'
	C V C C V	C V C V C V	
Tap + approximant	marya:da	mariya:da	'respect'
	C V C C V C V	C V C V C V C V	

In the case of uneducated speakers there is separation by means of a vowel with ge͡mination of the stop consonant of the cluster, e.g.:

Spelling Pronunciation	Spoken Form (uneduc.)	Gloss
agraha:raw̃	aggara:raw̃	'a locality'
V P C V^{h} V C V^{nr}	V P^{g}P C V C V^{nr}	
cakraw̃	cakkaraw̃	'wheel'
C V P C V^{nr}	C V P^{g}P C V^{nr}	

Where the consonants have the same place of articulation, ge͡mination takes place without separation of the consonants, e.g.:

ka:sta	ka:tta	'little'
C V S$_{t}$P$_{t}$ V	C V P^{g}P$_{t}$ V	
kartari	kattari	'astrological time'
C V L$_{r}$P$_{t}$V C V	C V P^{g}P$_{t}$ V C V	

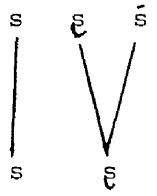
Krishnamurti states that retention of clusters is a feature obtaining in educated speech. In uneducated speech clusters are not retained according to his data. I wish to draw attention to the fact that the splitting up of consonant combinations occurs in both educated and uneducated speech, but is achieved by different means.

2.2.8

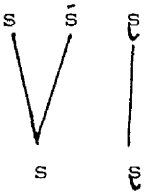
Sibilant Distinctions

Dental, palatal and retroflex sibilants are considered to be originally present in classical Telugu. Only two of these sibilants, that is, dental and retroflex, have distinctive functions in all regionally based dialects. The question of whether palatal [ś] has distinctive function in any regional dialect or social dialect of Telugu is disputable. Palatal [ś] is only found before front vowels, [s] being used in other contexts. In the orthography all three sibilants are represented by different symbols. But they merge in the ways shown below in the case of educated speakers.

Telangana Dialect



Other Dialects



This difference in merging is related to regional dialect divisions. [ś] and [ʂ] merge into a single unit [s] in the Telangana dialect, whereas [s] and [ś] merge into a single unit [s] in other dialects. In other words, in Telugu educated speech, there are only two distinctive sibilants, dental and retroflex. However, uneducated speakers of all regional dialects have only one sibilant. The dental, retroflex and palatal sibilants have all merged into a dental sibilant [s] in their speech.

According to Krishnamurti, all three sibilants are retained in educated speech, but as explained above, my evidence suggests otherwise.

2.2.9

Retention of [kʂ]

The orthographic cluster kʂ is pronounced as [t͡ʂʂ] initially and [tt͡ʂ] or [tt͡ʂʰ] medially. It is a cluster which occurs only in Sanskrit borrowings. Among those who have worked on Telugu phonology, only Reddy (1981:50) claims phonemic status for [t͡ʂʂ]. Her evidence for this being so is that it occurs in loan words and constrasts with other affricates, as in [ci:ra] 'scarce', and [t͡ʂʂi:ra] 'milk'.

As I made clear earlier (cf. 2.1.9) [t͡ʂʂi:ra] is only a bookish Sanskrit form and is never used by present-day speakers. Furthermore, it is an adjectival form and the corresponding noun form for it would be [t͡ʂʂi:raw̃]. It is thus not valid as a minimal pair with [ci:ra]. Orthographic kʂ (see also 7.3.0) in word initial position is found only in the borrowed Sanskrit lexicon, and therefore people consider it as a prestige symbol. It is present in a number of words of the lexicon that find a place in the functional vocabulary of Telugu speakers. For example:

Orthographic Form	Educated	Gloss
kʂaya	kʃeya	'tuberculosis'
kʂi:ɳam	kʃi:ɳaw̃	'reduction'
kʂaɳam	kʃaɳaw̃	'minute'

This orthographic form kʂ has three pronunciations. The question of the second consonant, a sibilant, is of some importance. In the cases where orthographic kʂ precedes a front vowel, it is pronounced as a palatal sibilant, as in the case of sibilants in general (see 2.2.8), or a palato-alveolar sibilant, and in all other cases it is a retroflex sibilant.

The following examples show the differences in pronunciation for the examples given above, and some others.

Orthographic Form	Educated Speech	Uneducated Speech	Gloss
kʂaɳa	kśeɳa	kɕeɳa Ch'eɳa	'tuberculosis'
kʂaɳam	kśenaw̃	chenaw̃	'minute'
kʂi:ɳam	kśi:naw̃	-[6]	
kʂo:bha	kʂo:ba	Ch'o:ba	'anguish'
kʂa:ram	kʂa:raw̃	-[6]	'alkali'

kʂ in word medial position is realised as [tts^h] or [tts], as in the following examples:

Orthographic Form	Educated Speech	Uneducated Speech	Gloss
lakʂaɳam	latts^h nũ	lattsanaw̃	'feature'
ra:kʂasuɖu	ra:ttssuɖu	ra:ttsasuɖu	'demon'
pakʂi	pattsi	pattsi	'bird'
kakʂa	kattsa	kattsa	'animosity'

According to my data, kʂ is preserved in the formal speech style only. It has nothing to do with regional and/or caste dialects. As is clear, uneducated speakers do not have much Sanskrit vocabulary in their repertoire, and they mostly substitute kʂ with alveolar [tts].

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6. These forms are replaced by native Telugu vocabulary.

2.2.10

Retention of Retroflex ɭ and ɳ

The stop consonants of retroflex quality are present in all forms of Telugu. Retroflex stops stand in contrast with dental stops in all dialects. The question of the retroflex sibilant has already been considered (cf. 2.2.8). Retroflex nasal and retroflex lateral are the remaining retroflex consonants. These two consonants are not present in certain speech forms across the Telugu-speaking area. However, they are distinctive in different styles of Telugu.

Alveolar [l] and [n] occur in place of the retroflex forms in non-standard speech. Speakers, on the basis of their educational background, perceive the retroflex consonants (lateral and nasal) clearly, but do not adhere strictly to their pronunciation. This attitude we can identify as contributing towards formal and informal styles.

The use of retroflex laterals and nasals is a prominent feature obtaining in the Coastal dialect. The upper-class[7] speakers of the Coastal area, both educated and uneducated, retain retroflexion, whereas the non-upper-class educated speakers of the Coastal dialect have free variation of retroflex and non-retroflex forms of laterals and nasals. Here they are generally governed by formal/informal situations. They may or may not have retroflex nasals and laterals, depending on the situation.

The retroflex lateral and nasal sounds are used in the Rayalaseema dialect in formal speech only. In informal situations, speakers replace the retroflex lateral and nasal consonants with alveolar consonants.

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7. I use the term 'upper class' here specifically to include all other castes which enjoy social prestige besides Brahmins.

The retroflex nasal and lateral consonants are totally absent in Telangana speech. Only such of the educated class who strictly observe spelling pronunciation in their speech sometimes achieve these sounds, but otherwise they replace them with the equivalent alveolar consonants.[8]

Thus, uneducated speech of the coastal dialect, non-formal speech of the Rayalaseema dialect and the total Telangana dialect, do not have retroflex lateral and retroflex nasal consonants. The examples in Table 2 illustrate this.

The following examples of Sandhi in the plural formation of Telugu also show that nasal and lateral retroflex consonants are restricted in their distribution.

kannu - 'eye'

baṇḍi - 'cart' -lu plural suffix

mullu - 'thorn'

kannu + lu ———> kaḷḷu Coastal dialect

kaṇḍlu ~ kaṇlu Rayalaseema dialect

kanlu Telangana dialect

baṇḍi + lu ———> baḷḷu Coastal dialect

baṇḷu Rayalaseema dialect

banlu Telangana dialect

mullu + lu ———> muḷḷu Coastal dialect

muṇḍlu ~ muṇḷu Rayalaseema dialect

munlu Telangana dialect

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8. Out of curiosity I collected some sample data from twelve schoolteachers of the Telugu language from the Telangana area. The following example was found interesting: Orthographic form - va:ṇi; Teachers' speech - va:ni; Gloss - 'Goddess of education'.

TABLE 2 : Retroflex Lateral and Nasal Distribution - Examples

Orthographic Form	Coastal Upper Class	Coastal Non-upper Class	Rayalaseema Formal	Rayalaseema Informal	Telangana	Gloss
peḷḷi	peɭɭi	peɭɭi ~ pelli	peɭɭi	pelli	pelli	'marriage'
maḷḷi	maɭɭi	maɭɭi ~ malli	maɭɭi	malli	malli	'again'
kaḷa	kaɭa	kaɭa ~ kala	kaɭa	-	-	'art'
ra:ṇi	ra:ɳi	ra:ɳi ~ ra:ni	ra:ɳi	ra:ni	ra:ni	'queen'
bo:ṇi:	bo:ɳi:	bo:ɳi: ~ bo:ni:	bo:ɳi	bo:ni	bo:ni	'first purchase of the day'

2.2.11

Retention of Fricative [f]

This being a borrowed sound from English and Urdu is treated as a prestigious form. It is also an acquired distinctive unit through schooling for the educated class. The Sanskrit [ph] which is present in certain Sanskrit lexical items of Telugu has undergone a change because of this acquired sound in that it may be replaced by [f].

Educated Speech

	Orthographic Form	Speech Form	Gloss
From English:	ka:fi:	ka:fi:	'coffee'
From Sanskrit:	phalitam	falitaw̃	'result'
	phalam	falaw̃	'fruit, result'
From Urdu:	fala:n	fala:na	'such and such'
	ma:fi	ma:fi	'excuse'

In Telugu only one symbol exists to represent [f] and [ph] orthographically. So all the above forms, irrespective of their source and original pronunciation, are represented by the symbol for [ph] in the Telugu script. Those speakers who are well versed in native language education adhere strictly to spelling pronunciation. This results in the following forms:

Spelling Pronunciation	Gloss
ka:phi:	coffee
phalam	fruit, result
phala:na:	such and such

Those speakers who do not have aspiration in their system pronounce [p] for [ph], have [ka:pi], [palam], [pala:na] for the above forms.

The use of [f] in an individual's speech is considered as a marker of status and prestige that he or she enjoys in society.

2.2.12

Conclusion

The discussion of the different usages of the various features in the foregoing sections (cf. 2.2.3 to 2.2.11) gives us an idea of how complex the language is. As stated earlier (cf. 1.2.0), Firth deals with such complex problems under a polysystemic approach of prosodic phonology. Any phonological system that is proposed must account for (a) regional dialects of the language; (b) educated and uneducated speech differences (which include literary and colloquial styles); (c) upper caste and lower caste differences, and finally (d) formal and informal styles (which incidentally also include superposed varieties). None of the treatments discussed in the foregoing sections deal with all these requirements. Scholars have taken care of only some of them. The total picture of the language thus remains obscure.

I am convinced (and I believe I conclusively prove this in Section 7.5.0) that only by resorting to the Firthian approach can we solve the problems of describing such a complex language situation.

CHAPTER THREE

STRESS AND SYLLABLE STRUCTURE*

3.1.0

Introduction

Stress and the syllable are aspects which have been discussed by many scholars in the study of language for a long time. What many linguists and phoneticians consider, and what laymen perceive as stress, refers to a simple fact that in a stretch of spoken syllables of a word or larger unit, one syllable is more salient or prominent than others. The reason for this prominence has been considered in different ways. These descriptions differ from each other mainly because of differences in the theoretical approach of the scholars. Frank (1974:60, quoted from An Introduction to English Prosody, Couper-Kuhlen 1986), observes, '...Stress appears to be a chameleon whose nature changes according to the experiment set up to detect its true colour'.

3.1.1

Various Definitions of Stress and Syllable

The various phonetic definitions of stress and of syllable have much in common, but no two phonological definitions agree with each other. Phonological definitions of stress vary from language to language. Some descriptions of phonological systems have not dealt with stress. This situation is precisely the one that obtains in Telugu today and no scholar has so far probed into stress and the significant role it plays in Telugu phonology. Before

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* An earlier version of this chapter was presented at the National Seminar on the Syllable, held at the Department of Linguistics, Osmania University, Hyderabad, India, during January 1986.

explaining the stress rules of Telugu, I present a general survey here of studies on stress which I feel have direct relevance to my analysis of Telugu stress.

3.1.2

Daniel Jones' Definition of Stress

The earliest reference to stress may be that of Daniel Jones (1918, 1976), who considers stress as a 'subjective activity', and describes stress as 'the degree of force with which a sound or syllable is uttered' (1976:245). An objective impression of stress may be that of loudness. Jones also states that if a word or phrase contains a number of peaks of prominence, it is generally found that the degress of prominence at the various peaks are unequal. Some of the peaks have greater prominence than others. What a speaker considers as stress may not really be perceived as stress by a listener. The sensitivity of the ear differs a great deal in different frequency regions. Intensity is a physical characteristic of a sound and loudness is the subjective property of a sound. Prominence also depands on the fundamental frequency and duration. Stress perception is totally different from the perception of loudness. To my knowledge, Jones is the only phonetician who clearly states that stress perception also involves knowledge of the language in which the utterance is spoken. He distinguishes between stress and prominence. For him the prominence of a syllable is its general degree of distinctness with combined effect of timbre, length, stress and intonation. He identifies stress as only the degree of force of the utterance, which is independent of length and intonation. Prominence of a syllable is a perceptual quality that may be increased or decreased by a change in components like length, stress, pitch and timbre. Stress, for Jones, is totally an

articulatory feature. He points out that a speaker of a particular language may not be able to perceive stress objectively from the physical stimulus, but will be able to get at it subjectively.

3.1.3

Stress as an Auditory Phenomenon

Some consider stress as an auditory sensation of the listener. The 'degree of loudness' is important under this view. Trager (1941) makes a statement that intensity is manifested as relative loudness. A similar view is also found in Trager/Smith (1957:36). Bolinger (1958), after a series of experiments, reaches the conclusion that the primary cue of what is usually termed stress in the utterance is pitch prominence. Bolinger considers duration as a co-variable with pitch, but leaves out intensity. Allen (1973) treats stress as an amplitude modification. He observes that what is interpreted by the speaker or hearer as stress, has no simple correlation with amplitude acoustically registered or loudness as auditorily perceived.

3.1.4

Position of Stress Related to Number of Syllables

Delattre (1965) in his observations on Spanish and German, draws attention to the fact that the position of stress varies according to the number of syllables that are present in the word. He states that syllable prominence is related to variations in (i) vowel intensity; (ii) vowel duration; (iii) consonantal duration (or consonantal occlusion), and (iv) consonant releasing force. Besides these four features, he also mentions a fifth feature, that is, syllable pitch, which involves fundamental pitch variation.

3.1.5

Articulatory and Acoustic Dimensions of Loudness

It is interesting that Bloomfield gives a definition of stress which combines both articulatory and perceptual dimensions. For him stress is the activity of 'speaking one of [the] syllables [in a word] louder than the other or others' (1933:90). Many years later, Couper-Kuhlen (1986:19) disputes such a view, stating that loudness and greater articulatory effort cannot be equated on any grounds. Couper-Kuhlen suggests the following articulatory and acoustic dimensions of loudness:

Articulatory		Acoustic		Auditory
Subglottal muscular adjustment	Increased subglottal pressure	Increased amplitude		Greater loudness
Laryngeal muscular adjustment	Increased tension in vocal folds	Increased fundamental frequency		[higher pitch]

(Couper-Kuhlen 1986:19).

From the above statement it is clear that the perceptual dimension of greater loudness has two acoustic correlates, viz., an increase in the amplitude of sound waves which reaches the ear (of the listener), and an increase in the fundamental frequency.

3.1.6

Couper-Kuhlen's Viewpoint of Stress

Couper-Kuhlen's (1986) contribution is the latest in the field, which I have come across. Her contribution, An Introduction to English Prosody, falls into two main parts, the first part dealing with prosodic forms, viz., syllable, stress, rhythm, intonation, etc., and the second part with

prosodic function. In the following parts of this section I present her viewpoint of stress.

3.1.6.1

Couper-Kuhlen (1986) considers stress from acoustic, physiological and auditory points of view. Under the heading of acoustic correlates of stress, she gives three acoustic cues which may be expected in the vowel or syllable nucleus of a stressed syllable. They are higher intensity, greater duration and higher fundamental frequency. Besides these primary cues there are a number of (optional)secondary cues to stress which are generally of a segmental nature. It is noticed that the presence of a glottal stop, an aspirated plosive or non-central vowel (in English)are usually the signs of stress. It is further stated that a syllabic sonorant, or a weak central vowel such as [ṫ] or [ə], signal the absence of stress.

Couper-Kuhlen, however, points out that neither primary cues nor secondary cues serve the purpose of identifying stress placement. This is due to some interfering factors, such as vowel identity. Each vowel has its own intensity, duration and frequency. These qualities of vowel depend on the articulatory position. Further they are conditioned by surrounding consonants. The vowels at the end of a phrase or clause tend to get lengthened, but not so in medial position. In rapid speech unstressed vowels are reduced in length compared to stressed vowels. Because of such interfering factors, Couper-Kuhlen comes to the conclusion that stress cannot be identified acoustically with perfect accuracy.

3.1.6.2

Couper-Kuhlen discusses three features under the heading of 'Physiology

of Stress'. Greater intensity, duration and pitch variation constitute these features. Greater intensity is produced pulmonically by muscular power or energy. Ladefoged et al. (1958) note such peaks in subglottal pressure at given intervals during an utterance, and suggest these peaks represent major stresses. More recent research[1] corroborates this feature as relevant only to emphatically stressed syllables.

Greater duration is related to movements of the articulators, and instrumental evidence is possible in this case. This effect also appears to be relevant to emphatically stressed syllables.

The articulatory basis for pitch variation is a subject on which phoneticians have never held a common view. Many of them are of the opinion that muscular adjustments in the vocal cords are responsible for changes in fundamental frequency. Ohala and Hirano (1967) were able to show through an experiment using electromyography that laryngeal muscles are actively involved in the control of pitch during phonation. This illustrates further that changes in subglottal air pressure can only account for a small part of pitch variation.

After the above-mentioned discussion, Couper-Kuhlen comes to the conclusion that phoneticians have understood the physiology of emphatic stress much better than that of non-emphatic stress. In the case of emphatic stress, pulmonic, laryngeal and vocal tract muscles are affected, whereas in the case of non-emphatic stress only increased laryngeal activity is noticed. This laryngeal activity results in greater loudness or higher pitch.

3.1.6.3

Stress is also discussed as an auditory phenomenon by Couper-Kuhlen. At the acoustic level we have three cues for stress, and on the articulatory

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1. Couper-Kuhlen refers to the work of Ohala (1977), 'The physiology of stress', in Studies in Stress and Accent, Larry M. Hyman (ed.), Southern California Occasional Papers in Linguistics 4, pp.145-68.

level we have another three features. How these articulatory and acoustic factors interact in order to produce an auditory impression of stress is the next problem. Couper-Kuhlen's views are summarised as follows.

Although it is often reported by phoneticians that intensity has no role to play in the perception of stress, Couper-Kuhlen, based on the investigations of Fry (1958, 60) and Bolinger (1958), comes to the conclusion that intensity is a sufficient cue for stress identification, though it is not necessary. The part that duration of vowel quality plays is considered as a mark for stress judgment by Fry. Correlating stress with pitch glide is not desirable. It is suggested by Couper-Kuhlen that vowel duration shows a link between pitch and perceived stress.

Couper-Kuhlen, on the basis of experiments of Bolinger and Fry, proposes a hierarchy for cues for stress in English. The hierarchy is as follows: fundamental frequency, duration and intensity. This hierarchy may differ from language to language. It is also suggested that there may exist a trading relation between these factors whereby the absence of one of them may be compensated for by the others. It is also noticed that stress distinctions are neutralised if fundamental frequency is excluded as a distinguishing factor.

While discussing a theory of stress perception, Couper-Kuhlen mentions Daniel Jones, who long before any psycho-acoustic evidence existed, said that the 'inner speech' of a speaker enables him to know the stress placement (cf. 1918, 1976:245, 9th edition).

3.1.7

Degrees of Stress: Lehiste's Observations

The structuralists made a strict separation of stress from pitch and attributed phonemic status to both. Four stress phonemes are postulated:

primary, secondary, tertiary and weak stress. Generative grammarians follow structuralists in separating stress from pitch, but give phonemic status to neither. Chomsky and Halle (1968) propose three phonologically conditioned rules at the word level, that is, main stress rule, alternating stress rule, and stress adjustment rule. The transformational generative approach is not relevant to this thesis.

Jones (1950) suggests that most stress languages employ two degrees of stress, strong and weak, for effecting distinction between words. Lehiste (1970) disputes the phonetic explanation of stress made by Chomsky and Halle (1968). She observes that fine gradations in stress cannot be expressed in phonetic terms, because word level stress in a real sense is an abstract quality - a potential for being stressed. Word-level stress is the capacity of a syllable within a word to receive sentence stress when the word is realised as a unit in a larger frame, i.e., sentence.

Sentence-level stress functions without changing the meaning of any lexical item, but it increases the prominence of one of the items in the sentence. For this it is necessary to identify three different stress patterns: primary stress (non-emphatic), contrastive stress, and finally emphatic stress. Lehiste states this and observes that there is phonetic evidence which shows that emphasised words are associated with subglottal pressure peaks. Emphasis thus has a first order phonetic correlate which word stress does not seem to have.

3.1.7.1

Lehiste (1970) observes that in many languages there are other cues that signal the difference between stressed and unstressed syllables. She points out the possibility of one such factor as a difference in vowel quality. In languages like English there is a tendency for most vowels in weakly stressed

to approach 'schwa' in quality. She cites Stetson's (1951) statement that all vowels in unstressed syllables arrive at the common 'schwa'.

In a study of general American vowels in isolated, stressed and unstressed positions, Tiffany (1959) found that the acoustical vowel diagram had a tendency to grow smaller from isolated vowel to stressed vowel to unstressed vowel. As the degree of stress diminishes, vowels tend to move towards a neutral point. At a later stage, in fast speech, the syllable may get diminished and lost, resulting in syllable reduction. This situation exists in Telugu, as I am going to explain in the later parts of this chapter. The syllable is a unit of stress placement and any reduction of a syllable because of lack of stress creates a phonological gap in the word.

3.1.8

Eli Fischer Jørgensen's Contribution

Eli Fischer Jørgensen (1948, 1961) distinguishes four different functions of stress: (a) Distinctive (phonemic) function - some languages use stress as a distinctive feature to give difference in meaning. For example, Russian and English; (b) Boundary function - in some languages the main stress has a fixed place within a word, so that the boundaries of the word are delimited in relation to the placement of stress. For example, Czech, Polish and Icelandic; (c) Uniting function - in some languages there is a mixed pattern of (a) and (b). For example, English. In English the reduction of stress indicates the union of two members as in the example below:

'black +'bird ———> 'blackbird ;

(d) Emphasising function - this function only indicates the attitude of the speaker. In a sentence some words may have more stress for the reason that they are considered important. Daniel Jones and his followers have recognised this

function as 'emphasis for contrast'. Jørgensen prefers to call it 'emphasis for attention'. Prabhakara Babu (1976) and Reddy (1981) recognise this feature in Telugu.

3.1.9

Ladefoged's Classification

Ladefoged (1975, 1982) describes stress as a suprasegmental feature of utterances. Stress, he states, applies not to individual vowels or consonants, but to a whole syllable. He distinguishes two types of syllable: stressed and unstressed; the stressed syllable is pronounced with a greater amount of energy than the unstressed syllable. Some languages have a fixed position of the stress in relation to the word, and there are some languages where stress is not a property of the word. Ladefoged states that all syllables in a French word are equally stressed but that the last syllable of the phrase may have slightly greater or increased stress, which is a feature of the phrase rather than the word (1975:224). Variations in the use of stress cause different languages to have different rhythms. Because of phrase-final syllables having a different stress and others sharing the feature of equal stress, French utterances give the impression of evenness in rhythm. Rhythm in Telugu is discussed in Chapter 4.6.0 by me, and it presents a different pattern.

Based on his observations, Ladefoged attempts to divide languages by proposing a three-way typological classification of rhythm differences. Languages of the first group have variable word stress (like English, German), and differ from those of the second group which have fixed stress (like Czech, Polish and Swahili). The third is the one consisting of those languages which have fixed phrase stress (like French). Ladefoged concludes by observing that

further research is required into languages before accepting the above-mentioned typological classification.

3.2.0

Lack of Accepted Definition for Stress

From the foregoing account, it is clear that there is no generally accepted definition of stress. In summary it is agreed that stress is not solely produced by the physical force of speech, but by a combination of factors such as (i) force of exhalation; (ii) definiteness of articulatory movement; (iii) duration of sound, and (iv) change of pitch or its possibility. A stressed syllable can thus be described as that which has (i) greater force than the other syllables; (ii) more definite articulatory movement; (iii) greater length, and (iv) variation of pitch levels.

3.2.1

The Situation in Telugu

Many Telugu scholars do not recognise the presence of stress in the Telugu language by means of which, ironically enough, they communicate. Some of them try to correlate the presence of stress with emphasis. The failure to recognise stress is due to prejudice against the spoken language. Sitapati (1936) rightly observes that, the rules of Telugu grammar 'were prepared before the cultivation of Telugu prose'. Stress was thus not noticed by earlier scholars, and was boycotted by the later classical school, treating it as a foreign product (1936:523). Although fifty years have passed since the above statement was made, there has been no change in the situation. Other than that, two scholars, Kelley (1959:146) and Prakasam (1971:91), have observed that stress is the property of the initial syllable of the word. They have not explored it further.

Some features related to stress observed by Delattre (cf. 3.1.4) are relevant for the description of stress in Telugu. In Telugu, as in many other languages, stress is one of the factors that conditions the duration of a sound or sequence of sounds. Therefore duration may be considered as one of the manifestations of Telugu stress. There are languages in which the stressed syllable is regularly longer than the unstressed syllable. For example, English. There are some other languages, like Czech, where the effect of duration is minimal. Czech has long and short vowels which can be stressed or unstressed. In Telugu, two degress of length are significant. Although length is phonemic, phonetically there are three degrees of length, i.e., long, half-long and short. Word-final short vowels fall under the category of 'half-long'. (however, there is one exception to this generalisation: the high back vowel sound, with or without lip rounding, which occurs only as a short vowel in word-final position.)

The typological classification proposed by Ladefoged (see 3.1.9) may not be able to accommodate a language like Telugu. In Telugu, stress is a property of the word which many speakers fail to recognise in their speech, but are able to recognise and perceive the absence of it in others' speech. The stress is very often found on the word initial syllable in Telugu as in Czech. But this is not all. In a disyllabic word the second syllable is unstressed. However, in a disyllabic word the second syllable has secondary stress in cases where the coda of the first syllable and onset of the second syllable happen to be similar consonants. For example:

'pat̪-t̪u 'silk'

'ak-ka 'elder sister'.

But,

'ma-ra 'machine'

'ka:-lu 'leg'.

In certain polysyllabic words, place of stress differs, whereby some syllables do not carry any stress. In all words of more than two syllables, there are some syllables without stress.

3.2.2

Proposed Rules for Stress in Telugu

In this section I propose stress rules for the Telugu word. In general, the method consists of counting back the number of syllables from the end of a certain part of the word. I refer to that part of the word as the stressable part (SP). This method is being adopted after Erik Fudge (1984).

The stressable part of the word in Telugu is that portion which is stripped of certain suffixes, like plural markers and case markers. (These suffixes are considered separately in 3.2.2.1). Native Telugu words do not have prefixes.

Native Telugu words are monosyllabic, disyllabic, trisyllabic and tetrasyllabic. General stress rules are given here, and it is also shown how the social and regional dialects vary in their use of the stress rules.

Rule 1: The word initial syllable is stressed in Telugu in all cases, i.e., monosyllabic, disyllabic, trisyllabic and tetrasyllabic forms, except in the speech of uneducated, non-brahmin speakers where the word initial syllable is unstressed and undergoes harmony in monomorphemic forms (cf. 5.2.2). In all other cases where the word initial syllable is stressed, it is not affected by harmony.

For example:

'po:	'get away' (imp.)
'gadi	'room'
'nalupu	'black'
'tiragali	'grinding stone, mortar'.

Rule 2: The second syllable of a disyllabic word (except in situations as mentioned in Rule 1) is unstressed. In normal slow spoken style and in isolation, the word will retain the second syllable, but in fast speech or across Sandhi, the second syllabic nucleus is lost in the environment of a following word-initial stressed syllable.

Examples:

Noun/adjective/possessive + noun	Connected Speech	Gloss
'va:ḍi + 'ḍabbu	→ 'va:ḍi 'ḍabbu → ['va:ḍḍabbu]	'this money'
'ka:lu + 'debba	→ 'ka:lu 'debba → ['ka:ldebba]	'kick'
'naga + 'kaṭṭu	→ 'naga 'kaṭṭu → ['nakkaṭṭu]	'ornaments'

If the first syllable is a closed one (i.e., (C)VC-CV), then the second syllable will have a secondary stress. For, example:

'ka|ˌ|u	'toddy'
'apˌpa	'elder sister'
'mugˌgu	'a floral design'

Rule 3: In trisyllabic forms, the word initial syllable is stressed in the usual way. The word final syllable bears a secondary stress. The second syllable nucleus, which is unstressed, is generally lost, thus giving rise to internal Sandhi in the language. If the second syllable has (the second part of a) a long consonant, or long vowel, it will also bear secondary stress, and in that case there is no possibility of internal Sandhi.

Examples:

Spelling Pronunciation		Fast Speech	Gloss
'kala,pa	——→	['kal,pa]	'timber'
'gura,ka	——→	['gur,ka)	'snoring'
'e:ḍupu	——→	['e:ḍ,pu]	'crying'
'maḍata	——→	['maḍ,ta]	'fold'[3]
'gaḷa:bha:	——→	['ga,la:,bha:]	'feud'
'gap,pa:,lu	——→	['gap,pa:,lu]	'boastings'

Rule 4: The tetrasyllabic forms of Telugu which are slowly disappearing from non-standard speech and fast speech, have a similar stress pattern to Rule 2. The word initial syllable is stressed. The next syllable following a stressed syllable is reduced or totally lost.

Examples:

'padakoṇḍu ——→ ['padkoṇḍu] 'eleven'

'taragati ——→ ['targati] 'class'

'gaṇapati ——→ ['gaṇpati] 'name of a god'

(See also a fuller analysis of word stress taking heavy and light syllables into account in Section 3.2.8.)

3.2.2.1. Nominal and verbal suffixes in Telugu

Nominal and verbal suffixes in Telugu are considered in this section, and stress rules for suffixed forms are proposed here. Suffixes may be monosyllabic or disyllabic.

Rule 5: The case suffixes and plural suffix[2] have stress patterning similar

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2. See 6.2.2 for rules of -lu suffix.

to word stems. When the case suffix or plural suffix follows a noun of disyllabic or trisyllabic structure, it has exactly the same effect as an independent word in Sandhi, that is, the last syllable nucleus of the preceding word is lost in fast speech. Examples:

Stem + Suffix	Spelling Pronunciation		Fast Speech across Sandhi	Gloss
'ko:ti + 'lu		——>	['ko:tlu]	'monkeys' (pl.)
'pa:pa + 'ni	'pa:pa 'ni	——>	['pa:pni]	'baby' (accu.)
ʲɛlaka + 'ki	'ʲɛlaka 'ki	——>	['ʲɛlakki]	'to the rat' (dat.)
'ce:ti + 'to:	ce:tito:	——>	[ce:tto]	'by hand'
da:ni + to:	da:nito:	——>	[da:nto][3]	'with that'
pani + to:	panito:	——>	[panto:]	'with work'
na:lugu + ku	na:luguku	——>	[na:lukku]	'at four'
mu:ɖu + lo:	mu:ɖulo:	——>	[mu:ɭlo:]	'in three'

Rule 6: Agent nouns are derived from abstract nouns by the addition of agentive suffixes like -ka:du. The agentive suffixes are bound forms and they cannot occur as independent forms. The suffixes have secondary stress.

Examples:

Noun + Agentive Suffix	Spelling Pronunciation		Fast Speech	Gloss
'mo:sam + 'ka:ɖu	——> 'mo:sa,ka:ɖu	——>	['mo:sa,ga:ɖu]	'cheat'
pa:ra + ka:ɖu	——> 'pa:ra,ka:ɖu	——>	['pa:ra,ga:ɖu]	'labourer'
be:ram + ka:ɖu	——> 'be:ra,ka:ɖu	——>	['be:ra,ga:ɖu]	'dealer'

3. Phonetically this [n] is a dental sound before a dental [t]. Otherwise Telugu has an alveolar [n]. For phonetic details, see Kostic et al. (1979:73 and 173).

The nasal of the second syllable of the noun form is lost before the stressed initial syllable of the suffix. Voicing of the noun stem extends to the initial consonant of the suffix.

Rule 7: Some native Telugu forms and most Sanskrit borrowings of abstract nouns in Telugu end in -mu in the final syllable in orthographic representation. In spelling pronunciation -mu is reduced to [m]. In spoken Telugu, intervocalic and word final [m] is pronounced as [w̃].

i) When [w̃] occurs in intervocalic position in an unstressed syllable, the nasalisation is lost and it is pronounced as [w]. For example:

Spelling Pronunciation	Normal Slow Speech	Fast Speech	Gloss
'de:mudu	['de:w̃udu]	['de:wudu]	'God'
'ma:ma	['ma:w̃a]	['ma:wa]	'uncle'
'e:miṭi	['e:w̃iṭi]	['e:wiṭi]	'What?'

ii) In word final position -mu is reduced to -m and this -m is pronounced as [w̃] and syllabifies with the preceding vowel. The resulting syllable is stressed. This is the reason why Reddy perceives it as 'extra prominence given by increasing the length of /m/' (1981:130). For example:

Spelling Pronunciation	Spoken Form	Gloss
'viṣaya,mu	['viṣa,jaw̃]	'subject, matter'
'de:śa,mu	['de:,śaw̃]	'country'
'pa:naka,mu	['pa:na,kaw̃]	'a sweet drink'

Verbal suffixes may be classified under two heads: (i) the auxiliary verb stems of a compound verb, and (ii) the non-finite forms. Rule 8 applies to the first type and Rule 9 to the second.

Rule 8: The auxiliary verb stem of a compound verb generally plays the role of emphasis marker semantically. The auxiliary verbs when they

occur independently, have forms such as 'kottu,[4] 'padu, 'pettu, 'kalugu, with stress on the first syllable, and in Sandhi the stress is replaced by voicing of the onset of the syllable with no loss of the preceding syllable as in the case of agentive suffixes.

Verb + Auxiliary	Normal Pronunciation	Fast Speech	Gloss
'kana + 'padu	'kana'padu	'kanabadu	'to be seen'
'ra:s + 'pettu	'ra:si'pettu	'ra:s bettu	'to write and keep aside'

However, in the case of verbs which have infinitive forms with nasal ending, the nasal is lost. For example:

'vellan[5] + 'kottu	'vella 'kottu	'vellagottu	'to drive away'
'vellan + kalugu	'vella'kalugu	'vellagalugu	'to be able to go'

It is the onset of the auxiliary that is voiced.

Rule 9 Non-finite verb suffixes are also treated as stressed elements in this thesis. They are monosyllabic and induce vowel harmony in the preceding verb root.

a) If the nonfinite verb suffix has the structure CV (i.e., with an onset and peak), the C (onset) is generally retained and the preceding syllable though weak, is not lost, and harmony takes place.

Verb Stem + Suffix		Spoken Form	Gloss
'adugu + 'te:	——>	['adigite:]	'if asked'

In uneducated speech the final vowel of the preceding word is lost and harmony does not take place.

'adugu + 'te: ——> ['adugte:]

4. Kottu is an auxiliary verb, so is different from -kottu, the agentive suffix given under Rule 6.
5. This is an auxiliary verb from old Telugu.

b) Where the suffix has V onset, the preceding vowel is lost and harmony takes place. This is common to all speakers.

'aḍugu + 'e:——→ ['aḍige:] relative participle of 'to ask'.

When stress is taken into account there is no longer a need for considering consonantal Sandhi in so many rules, as has been done in the past by Krishnamurti (1957), Prakasam (1971), Sastry (1974), Sarma (1974), Swarajya Lakshmi (1982), and Mohana Rao (1983). For details see Chapter Six : Sandhi. Prosodic formulae to represent my rules of stress are given in Chapter Six, where Sandhi is considered.

3.2.3

Emphatic Stress in Telugu

Eli Fischer Jørgensen (1948, 61) notes the functions of stress in language, and emphasising function is one of them (cf. 3.1.8). In Sections 3,1,3, 3.1.4 and 3.1.6, we have seen how phoneticians considered prominence and stress. Couper-Kuhlen has rightly concluded that the physiology of emphatic stress is understood accurately by phoneticians but not that of non-emphatic stress.

In this section it is proposed to look briefly into the various types of emphatic stress that occur in Telugu. It is also proposed to analyse the data in such a way that by identifying the mode of emphatic stress, we will be able to get the social background of the speaker. Scholars who worked on Telugu have not paid sufficient attention to this problem of emphatic stress. Most of them dealt with only one feature or another. I present the following analysis which covers all the types.

Emphatic stress in Telugu speech is achieved in the following ways, either independently or in various combinations:

1. Lengthening of the vowel;
2. Lengthening of the consonant;
3. Aspiration of the consonant, and
4. Tense closure of the consonant.

Of these, aspiration of the consonant has got the unique feature of combining with the rest of the features. This is perceived as stress.

Emphatic Stress by Lengthening of the Vowel or Consonant

The feature of lengthening the consonant is observed in uneducated speech and in the informal style of educated speech. Babu (1976) and Reddy (1981) observed that consonant lengthening may also take place in word initial position. In my data I do not have such forms. It is not out of place to mention here that consonant clusters are possible in word initial position but not consonant geminates.

In Telugu word structure, a long vowel cannot be followed by a long consonant, nor can a long consonant followed by a long vowel, except in emphatic forms.

Examples of Non-emphatic Spelling Pronunciation

'kala	'dream'	CVCV	'kalla	'false'	CVCCV
'kara	'stain'	CVCV	'karra	'stick'	CVCCV
'palu	'many'	CVCV	'pa:lu	'milk'	CV̄CV
'pedda	'big'	CVCV	'pe:da	'poor'	CV̄CV

In order to maintain the identity of the word, speakers resort to lengthening of consonant or vowel in such a way that it does not create ambiguity, and at the same time the listener can recognise the emphatic stress. See the examples given below:

1. Lengthening of the Consonants

Non-emphatic Forms		Emphatic Forms		Gloss
Spelling	Pronunciation			
'oka	V C V	'ok,ka	V C C V	'one'
		'okkha	V C C V	
'ceyi	C V C V	'ceyyi	C V C C V	'do!' (imperative)

It is observed that the lengthening of consonant may also be followed by aspiration. Lengthening of the consonant is a rare phenomenon in general, and more so in the Coastal dialect. Contrary to this, in the Telangana dialect it is a common feature. The consonant in the second syllable is generally lengthened in such cases. For example, in Telangana dialect we have forms like,

paka paka	C V C V C V C V	pakka pakka	C V C C V C V C C V	'laughing' (sound, onomatopoeic)
biga	C V C V	bigga	C V C C V	'to hold tightly'

In Telangana dialect, aspiration, however, is not observed in above forms.

2. Lengthening of the Vowel

Non-emphatic Forms		Emphatic Forms		Gloss
Spelling	Pronunciation			
'pe dda	C V C^{h} C V	'pe:dda	C$\bar{V}$ C^{h} C V	'big'
		'pe:d,dha	C$\bar{V}$ C^{h} C V	
'manci	C V C^{h} C V	'ma :n,C i	C$\bar{V}$ C^{h} C V	'good'
		'ma:ɲ,Ch i	C$\bar{V}$ C^{h} C V	
kotta	C V C C V	'ko:t,ta	C$\bar{V}$ C^{h} C V	'new'
gaṭṭiga	C V C^{h} C V C V	'ga:ṭ,ṭi,ga:	C$\bar{V}$ C C V C$\bar{V}$	'loudly/ emphatically'
		'ga:ṭ,ṭhi,ga:	C$\bar{V}$ C^{h} C V C$\bar{V}$	
	also	'ghaṭ,ṭi,ga:	^{h}C V C C V C$\bar{V}$	

The syllable nucleus of the word initial syllable is lengthened in order to have emphatic stress. As mentioned earlier (cf. 3.2.3) a long vowel cannot normally precede a long consonant in Telugu word structure. The very presence of such a feature is contrary to the general rule, but enables speakers of the language to perceive the emphatic stress through that.

3. Aspiration

Besides lengthening of vowel or consonant for emphatic stress, Telugu also employs the phonetic feature of aspiration for the same. As already mentioned under 2.2.3, aspiration is a marker of the caste of the speaker. The observations of Krishnamurti assign aspiration to the educated class and those of Sjoberg attribute it to formal style. Telugu Akademi surveyors place it as a caste marker. My data agree with the Akademi observations.

Irrespective of their social background, all speakers make use of aspiration for emphasis whatever the linguistic situation may be, viz., formal or informal. The educational level of the speakers is not relevant, as all speakers, irrespective of their educational status, use aspiration for making emphasis. It is also observed that prestige is associated with aspiration for educated speakers, although many fail to make use of it correctly. Because of this, hyper-forms have come into existence (see 7.5.1., where a discussion of such hyper-forms is set out). As with the regular aspirated plosives in the language, emphatic stress also involves aspirated nasals and liquids which otherwise do not find a place in the language. Some examples are given below:

Non-emphatic forms

Spelling Pronunciation		Emphatic Forms		Gloss
inka:	$vc^{h}c\bar{v}$	'inkha:	$vc^{h}c\bar{v}$	'still, more'
ba:ga:	$c\bar{v}^{h}c\bar{v}$	'ba:gha: ~ ba:ha:	$c\bar{v}^{h}c\bar{v} \sim c\bar{v}^{h}\bar{v}$	'excessively'
callaga:	$cvc^{h}cvc\bar{v}$	'calˌlhaga:	$cvc^{h}cvc\bar{v}$	'coolly'
		'calla,gha:	$cvccv^{h}c\bar{v}$	
		'calˌlaha:	$cvccv^{h}\bar{v}$	
lekka	$cvc^{h}cv$	'lekkha	$cvc^{h}cv$	'count, sum'
ga:li	$^{h}c\bar{v}cv$	'gha:li	$^{h}c\bar{v}cv$	'wind'
	$^{h}c\bar{v}^{h}cv$	'ga:l^{h}i	$^{h}c\bar{v}^{h}cv$	

4. Tense Closure of the Consonant, generally Stops and Nasals

Non-emphatic forms

Spelling Pronunciation	Emphatic Forms	Gloss
utta	'utta	'empty, vain'
pa:ta	'pa:ta	'old'

While concluding the discussion, I must bring a point to the notice of all concerned. All the speakers, irrespective of their regional or social variations, have emphatic stress which involves the pulmonic, laryngeal and vocal tract muscles (see 3.1.6).

3.2.4

Syllable: Various Definitions

Syllable is considered as the smallest domain of speech utterance over which prosodic features extend their influence.

Elizabeth Couper-Kuhlen (1986), while attempting to define the syllable in English (ibid., p.10), very rightly states that it is easier to state what the syllable is not, rather than stating what it is. In this part

of the the thesis I present a survey of general rules of syllable theory, followed by earlier work done by scholars on syllable division in the Telugu language. I do not propose to argue on the lines of Kohler (1966),[6] who states, 'It can be demonstrated that the syllable is either an UNNECESSARY concept, because the division of the speech chain into such units is known for other reasons, or an impossible one, as any division would be arbitrary, or even a harmful one, because it clashes with grammatical formatives'. It is also interesting to note that Chomsky and Halle (1968) pay no attention to syllable structure.

However, I propose some rules for syllabification in Telugu, as I consider the syllable an important prosodic unit in Telugu to which much attention needs to be paid. It is a necessary concept in Telugu phonology and I present an argument which is not arbitrary in the following pages.

Sapir (1925) suggests that phonemes may be grouped into different categories on the basis of their distribution and capacity to combine with other phonemes. Bloomfield (1933) advances this theory further and argues that it is the only structurally relevant definition of the phoneme. Trubetzkoy (1939) treats distribution as a desirable supplement to the description of oppositions in terms of features. Eli Fischer Jørgensen (1948, 1961) proposes a theory combining distinctive features and their combinations.

The syllable has been described as a unit between word and phoneme. Hockett (1955) puts it as 'the smallest unit in the structure of an utterance'. Abercrombie (1964) equates the number of syllables in an utterance with the the number of chest pulses, following Stetson (1951). The chest pulse theory

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6. K.J. Kohler (1966), 'Is the Syllable a Phonological Universal?', Journal of Linguistics 2, pp.207-8 (quoted from Couper-Kuhlen (1986)).

of Stetson has been disproved by Ladefoged, Draper and Whitteridge (1958), who through electromyographical experiments demonstrated that the syllables (or at least what are perceived as syllables) are not accompanied by bursts of muscular activity. Jespersen and Bloomfield associate the syllable with vocalic sonority. Most other scholars who discussed the syllable, as already mentioned earlier, gave a phonetic definition for it. It is noted by many that in practice it is often impossible to define the limits of a phonetic syllable because there is no means of fixing any exact points of minimum prominence. In many cases the bottoms of the troughs (of prominence) must be considered as flat, that is to say, there is no single point which can be regarded as the point of syllable separation.

Pike (1947) makes some attempts to distinguish between phonetic and phonological syllables. He describes the same in terms of -etic and -emic syllables. An -etic syllable is a continuous sequence of sounds which stands between two breaks but which does not have a break within itself. An -emic syllable is a group of sounds that constitute the smallest unit of the rhythm of the language. O'Connor and Trim define the syllable as a minimal pattern of phoneme combination with a vowel unit as nucleus, preceded and followed by a consonant unit or permitted consonant combination (1953).

Both Abercrombie (1964) and Hockett (1955) agree on defining the syllable as a unit consisting of three phases, viz.:

Abercrombie (1964)		Hockett (1955)
1. Releasing phase	corresponds to	onset
2. Central phase	corresponds to	peak
3. Arresting phase	corresponds to	coda.

Of these, Phases 1 and 3 have consonants, and only Phase 2 will have

a vowel. Generally speaking then, in languages the following combinations are possible:

1. onset - peak - coda
2. onset - peak - ø
3. ø - peak_coda
4. ø - peak - ø.

Of the above, types 2 and 4 ending in peak are known as open syllables, and types 1 and 3 are known as closed syllables.

Fudge (1969) observes that a systematic element is characterised, rather than defined, by its distribution. This observation is relevant in the context of discussion on the Telugu syllable.

3.2.5

The Telugu Syllable - Review of Earlier Works

Krishnamurti (1961) is the first scholar to discuss the syllable in Telugu. He states that each syllable has a vowel as nucleus (peak). He observes that 'any consonant or consonant group not preceded by a vowel belongs to the following one'. In the same manner, 'single consonants occurring between vowels always belong to the following vowels'. He then states that 'consonant groups in this position (i.e., intervocalic) are divided between the preceding and following vowel nuclei, the first member of the consonant group belonging to the preceding nucleus and the second member to the following nucleus' (ibid.:239). He cites the following examples:

ka-da-lu

kruc-cu

i:ḍ-cu

He rejects the alternative analysis of dividing the forms so that both consonants form the onset of the second syllable as in kru-ccu and i:ɖcu for the reason that sequences of the type cc- and ɖc- are not possible onsets in Telugu.

Reddy (1981:140) questions the syllable division of Krishnamurti. Her basic argument is about consonants that do not occur word initially in Telugu. According to Krishnamurti's principle of syllable division, the following forms would be divided as shown below:

ka-ɭa	'art'	kaʈ-ɳam	'dowry'
pa:-ɭi:	'nib of a pen'	ra:ʈ-ɳam	'spinning wheel'

But as ɭ and ɳ do not occur in word initial position in Telugu, Reddy raises an objection to this division, but offers no alternative.

Reddy tries to explain Telugu word structure in terms of syllables. She makes special mention of -mu as follows:

> Words of three syllables or more which end in -mu also have an alternative pronunciation[7] by the same speakers, without the final -u. In colloquial Telugu, the final syllable -mu is usually shortened by dropping the -u. In such a case, the sequence is still treated as a syllable even when it occurs without a vowel, because of the extra prominence given by increasing the length of the -m, the consonant in this position thus becoming a syllable
>
> (ibid.:130).

In the later parts of her analysis, she treats -m as a consonant (see Reddy 1981:144).

Vennemann (1972) proposes a law of initials for syllabification. It requires that in a particular language, syllable-initial clusters should conform as far as possible to the constraints on formative initial clusters.

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7. To my knowledge -mu is only found in formal written forms. In informal writing it is reduced to -m. At least in my data I have no evidence to show that -mu is a spoken form.

much earlier than Vennemann, Hjelmslev (1935) proposes a different approach. He argues in terms of syllable-initial consonants and syllable-final consonants. According to Hjelmslev, syllable-initial or syllable-final clusters must not be made up of sequences which do not occur as word initial or word final clusters. Pulgram (1970) emphasises the same by observing that 'any syllable boundary in part of the utterance must obey the constraints that prevail in the language under scrutiny at the word boundary'. Reddy takes into account the principles of syllabification suggested by Hjelmslev, Pulgram and Vennemann. She uses them as guiding principles when proposing a rule for syllabification for the Telugu language. It must be pointed out, however, that these principles cannot be applicable to Telugu, since there are no consonant clusters at the word-final position in the language. As a matter of fact, even single consonants do not occur in word-final position. In addition, most of the initial clusters are Sanskritic in origin and relatively few in number. Reddy, at one level, observes -m occurring as a word-final consonant and at another point treats it as syllabic. Furthermore, she includes three and four medial consonant clusters in her phonology of Telugu. The forms in my data for the same dialect under consideration allow no more than two and three medial consonant clusters. Examples cited by her are compared with my data below:

Reddy's Data	My Data	Gloss
var͡jyam	varjeW̃	'inauspicious time'
sva:tantryam	sotantraW̃	'independence'

The main problem with her analysis is that her set of rules cannot accommodate all her data satisfactorily. This is because of her mixing native Telugu forms with Sanskrit forms which are present only in the

Telugu orthography. Even the educated speakers who are loyal to spelling pronunciation, do not have these forms in their vocabulary.

Fudge's (1969) statement quoted earlier, that a systematic element is characterised rather than defined by its distribution, may be remembered here. The Telugu language is a vowel-ending language (traditional scholars have described it as 'ajanta bha:ṣa') and therefore the patterned principles applicable to consonantal groups in other languages cannot be applicable to Telugu. Modern Telugu has borrowed vocabulary from other languages like English, Urdu and Hindi, in addition to Sanskrit, but has imposed its vowel-ending feature on all the borrowed forms. For example:

English and Hindi	>	Telugu	Gloss
bʌs		bʌssu	'bus'
sku:l		sku:lu	'school'
pe:pə[r]		pæparu[8]	'paper'
naukər		naukəru	'peon'

It may also be noted that languages such as Italian, of the Romance language family, are similar to Telugu in not having word-final consonants. In Italian word-final consonants occur only in loan words, except for /m, n, l, r/ in poetry or oratorial speech with apocopy of final vowel (Hall 1948:11).

As noted earlier, Reddy's syllable division (op.cit.:144) in Telugu cannot account for many problems that exist in Telugu. Krishnamurti's analysis with regard to non-word initial [ɳ] and [ɭ] has been questioned by her without offering an alternative. Her first rule does not deal with this problem. Her second rule discusses word initial, three-consonant

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8. Incidentally, this is an example of a mono-morphemic form that undergoes vowel harmony in the speech of Coastal dialect speakers.

clusters which are rare according to her. I prefer not to treat them as part of the Telugu system because they are all borrowed items from Sanskrit. Reddy's third rule deals with four consonant sequences that occur in word-medial position. I have a similar objection as mentioned earlier in the case of the second rule. Her fourth rule deals with two consonant sequences. This needs careful consideration and critical analysis. I reproduce here Reddy's rules:

> 1. Single consonants can occur word initially with only few restrictions. Only /m/ can occur word finally. Therefore single intervocalic consonants can be more reasonably assigned to the following syllable.
>
> 2. Word-initial three-consonant clusters are rare. Therefore, three-consonant sequences will be divided between two syllables. As there are no word-final consonant clusters, the division will be -C.CC-.
>
> 3. Four-consonant sequences (which are relatively rare and none occur word-initially), will be divided -C.CC- for the same reasons as put forward to justify (2).
>
> 4. This leaves the two consonant sequences, which are rather more problematic. Some of them occur as word-initial clusters, e.g. (tr, pl) etc. Others do not occur word-initially and most of these could not conceivably so occur even in loan words e.g. (pt, tk), etc. For these reasons the following principles of division will be adopted.
>
> (a) The consonant sequences that can occur word-initially are not separated. Both consonants are grouped with following vowel.
>
> (b) In all other consonant sequences the consonants are separated, with the first closing the preceding syllable, and the second beginning the following syllable. This procedure will apply not only to sequences made up of two non-identical consonants, but also to sequences consisting of two identical consonants (which are pronounced as long consonants), that is to say that the first half of a phonetically long consonant will be assigned to the preceding syllable and the second half to the following syllable.
>
> (ibid.:144-5)

Reddy thus recognises that only a limited number of consonant sequences occur in word-initial position.

In word-initial position, consonant clusters are possible in modern Telugu only in borrowed vocabulary. In the case of two consonant clusters of C_1, C_2 type, C_2 can only be one of [r], [l], [j] and [w]. (The only exception to this is the cluster [kṣ] for which I propose an alternative solution in Section 7.3.0.) This leads us to the conclusion that the second consonant of an initial cluster in Telugu borrowed vocabulary is either an approximant or a trill. Joseph H. Greenberg (1978) in his paper on Initial and final consonant sequences , states that liquid sounds tend to follow the obstruents in initial clusters, but that the reverse is not possible. In word-medial position, however, this may be possible. This fact indicates that in word-medial position, both word-initial clusters as well as non-word initial clusters may occur. The non-word-initial clusters occuring in word-medial position may be due to internal Sandhi. From Greenberg's data it is clear that there are languages with word-initial stop + stop sequences but they, at the same time, have stop + fricative and fricative + stop sequences in word-initial position. None of these sequences is possible in Telugu. Incidentally, the sequences [pṭ] and [ṭk] which are cited by Reddy as not possible in word-initial position, are present in word-medial position in borrowed vocabulary; for example:

capṭa: 'even, level'

jaṭka: 'horse-drawn cart'

Although Reddy has cited the occurrence of geminates in word-initial position under emphasis, she does not include geminates among the consonant sequences that can occur in word-initial position, as kkonu . I am not aware of such initial geminate forms.

3.2.6

Telugu Syllable Division Rules

Fudge (1969) observes that, 'The procedures by which we set up the syllable in a particular language (or by which we decide where to place syllable boundaries in words of that language) are no part of its definition as a theoretical unit either in general or in that language' (1969:25). This particular observation is a source of inspiration for me to attempt a statement of Telugu syllabification rules.

Firth (1948) suggests that a two-phonological systems approach is much more useful to describe the total picture of a language which has loan words from another language. It is necessary to separate the native Telugu system from the borrowed lexicon. As Greenberg (1965:9) says, 'The line between forms recent enough to be considered borrowings and those which can be fully assimilated into the language, is difficult to draw'. But an attempt is made here by taking into account the observations of Krishnamurti (1961) and Sjoberg (1963). Krishnamurti while discussing the differences between educated and uneducated speech habits, observes that clusters are present in educated speech, whereas they are not to the same extent (or not at all) present in uneducated speech. Sjoberg notices that formal style is more 'Sanskrit'-like. These observations have led me to bifurcate the Telugu language into two groups as native and borrowed. Four rules are needed for syllable division for the native vocabulary, and another four rules for the borrowed vocabulary. The rules are presented here.

3.2.6.1

Native Telugu - Syllable Division Rules

Rule 1: Any single consonant followed by a vowel belongs to the

following vowel.

CV- CV-CV-CV

V-CV

Rule 2: Any word-initial consonant group of different consonants followed by a vowel belongs to the following vowel.

C_1C_2V-

Initial clusters in native Telugu vocabulary are very rare. Generally such forms of old Telugu are simplified in modern Telugu as in the examples shown below.

Old Telugu	Modern Telugu	Gloss
mra:nu	ma:nu	'trunk, stem'
mringu	mingu	'to swallow'
tre:ɳupu	te:pu te:ɳupu	'belching'
krotta	kotta	'new'

It is observed that in C_1C_2 group C_1 is generally a stop consonant (either oral or nasal) and C_2 is a liquid consonant. The above-mentioned simplification of word-initial clusters of native Telugu forms is common to both educated and uneducated speakers, whereas reduction of word-initial clusters is less common in non-native Telugu forms used (at least partly) in educated speech (cf. 3.2.6.2).

Rule 3: Any two-consonant sequence in medial position is divided between the preceding and following vowels. Medial consonant clusters will thus be split in two. The first consonant forms a coda of the preceding nucleus and the second forms an onset of the following nucleus VC-CV, CVC-CV. This is the case with geminates also which are restricted to medial position.

Examples:

a:r-pu	'to extinguish'	ka:l-pu	'firing'
i:ɖ-cu	'to drag'	ma:r-pu	'change'
e:ɖ-pu	'weeping'		
o:r-pu	'patience'		
ac-cu	'print'	peɭ-ɭi	'marriage'
ak-ka	'elder sister'	kaɭ-ɭu	'eyes'
		baṇ-ḍi	'cart'

Here we find syllable-final consonants which are not possible in word-final positions, so it is reasonable also to have syllable-initial consonants which do not occur in word-initial position. This justification will take care of forms like kaṭ-ṇam and ka-ɭa. In the case of kaṭ-ṇam a possible explanation for this occurrence of syllable initial [ṇ] may be that of homorganic consonant. In the environment of a retroflex stop, the nasal also assumes retroflexion. In this case evidence can be drawn from the Telugu writing system. The word is represented in the Telugu orthography as కటనం katnam; న stands for [n], an alveolar nasal, not a retroflex nasal which is represented by ణ. But a phonetic explanation of the above type is not possible in the case of syllable initial [ṇ] as in o:ṇi 'a girl's dress item', or syllable initial [ɭ] as in kaɭa 'art'. Because of examples such as these and similar such others, I have come to the conclusion that in the case of Telugu syllable division, it may be proposed that syllable initials may generally, but not always, occur as word initials.

Rule 4: There are some three consonant clusters in medial position in native vocabulary which are direct descendants of syllable

reduction. Of the three consonants, the first consonant is invariably a nasal. Hence, it is proposed to treat it as a postvocalic nasal and the sequence is divided as follows:

CVC-CCV(CV)

Examples:

gun-ḍra:yi 'a round stone'

kan-dri:ga 'hornet'

kan-tri: 'mischievous'

Four consonant clusters are not possible at all in native Telugu.

3.2.6.2

Non-native Telugu - Syllable Division Rules

Rule 1: The consonant followed by a vowel belongs to the following vowel and forms a syllable with it. This is similar to the native system and such examples may be said to be assimilated into the native system.

Examples:

la-la-na 'woman'

ta-ra-ga 'wave, surge'

ni-śi-ta 'much sharpened'.

Rule 2: The word-initial consonant group of different consonants belongs to the following vowel. (I specifically state 'different consonants' as there are no word-initial geminate consonants in Telugu.) This is also similar to the native system, but an interesting fact is that initial clusters are not simplified in the case of borrowed vocabulary. The possible C_1C_2 in word-initial position are as follows:

C_1 = P, N, S, G

(Exponents are p, t, k, b, d, g, kh, bh, dh, m, n, s, ś, h and w.)

C_2 = L, G (P, N)

(Exponents are l, r, y, w; to a limited extent - p, t, ṭ, k, ph, th, m, n.) (P, N are limited in the sense that they occur in C_2 position following a sibilant in C_1 position.)

Some examples are given below:

pre:-ma	'love'
pla -va	'name of a Telugu year'
tra:-na	'strength'
tya:-gi	'donor'
twa-ra	'speed'
dwa:-da-si	'twelfth day of the lunar fortnight'
mla:-na	'faded'
pre:-ta	'corpse'
śle:-ṣa	'a figure of rhetoric'
śre:-ṇi	'line, row, range'
śya:-ma	'maiden'
sva:-ri	'a pleasure ride'
smi-ta	'smiling'
stha-pa-ti	'architect'
stu-ti	'praise'

Rule 3: In medial position a sequence of two consonants will be split as in Rule 3 of native Telugu, as follows:

VC-CV	uṣ-ṇam	'heat'
	as-thi	'bone'
	aṇ-ḍa	'globe'

CVC-CV mus-ti 'begging'

kas-tam 'problem'

The borrowed vocabulary has different possibilities of sequences from those that obtain in the native vocabulary. Hence this rule is necessary. The word-medial consonant sequences generally consist of all those sequences that occur in word-initial position and also certain other sequences.

Rule 4: A medial sequence of three consonants will be split as follows:

(C-VC-CCV ra:s-traw̃ 'state'.

A separate Rule 4 is necessary for non-native vocabulary of Telugu as the native vocabulary has no four-consonant clusters. Native Rule 3, and non-native Rules 3 and 4 require clarification. Syllable-final consonants are possible but word-final consonants are not, and syllable-initial consonants may differ from word-initial consonants. For example, [s] does not occur as a word-final consonant either in the native or non-native vocabulary of Telugu, but it does occur in non-word-final position, for example, misa 'pretext'. Similarly [s] does not occur in word-initial position, but it occurs as syllable initial in the borrowed vocabulary, as in the case of

vi-sam 'poison'

ro:-sam 'anger, wrath'.

3.2.7

Syllable Reduction in Telugu

Syllables in modern colloquial Telugu are reduced under the following conditions, with resultant internal Sandhi forms with loss of vowel:

a) In words which comprise more than two syllables, the second syllable nucleus is generally reduced, facilitating the development of new clusters in the language. It is to be noted that the second syllable in tri- or poly-syllabic words is unstressed. Examples:

Spelling Pronunciation		Spoken Form	Gloss
'a:rupu	>	'a:rpu	'to extinguish'
'nelalu	>	'nellu	'months'
'ko:rika	>	'ko:rka	'desire'
'modalu	>	'modlu	'initially'

Syllable reduction also takes place at word junction. This phenomenon is dealt with in detail under Sandhi (cf. 6.2.3).

b) In word-final position -mu is reduced to [w̃]. This happens only in Sanskrit borrowings. Sanskrit words were borrowed into Telugu by the addition of -mu and later this -mu was reduced to [w̃] in colloquial speech.

Sanskrit	Old Telugu	Modern Colloquial Telugu	Gloss
pustaka	pustakamu	pustakaw̃	'book'
de:śa	de:śamu	de:śaw̃	'country'
viṣaya	viṣayamu	viṣayaw̃	'matter, affair'

[w̃] in these cases is phonetically similar to intervocalic m in modern Telugu, which is realised as [w̃]. Intervocalic [w̃] sometimes may lose nasality (cf. 5.1.10.3).

3.2.8

Heavy Syllables and Stress

Deborah Ohsiek (1978) discusses the question of heavy syllables in

relation to stress in a number of languages. Word stress, which is accepted as a suprasegmental feature common to many languages, is a language specific phenomenon. In a computer assisted investigation of stress rules for over 150 languages in the Stanford Phonology Archive (1976), Ohsiek observes that in at least thirty languages under consideration, heavy syllables play a major role in the determination of stress placement. Heavy syllables Ohsiek defines as long and/or closed syllables. These consist mainly of long or diphthongised vowels and/or one or more syllable-final consonant. The heavy syllable may contain some phonological or phonetic characteristics (such as increased duration/intensity) to draw the word-level stress. The segmental composition of heavy syllables may be different in different languages, but in all languages the heavy syllables have greater quantity than light syllables. In this context Ohsiek explains her definition of light syllables. They are defined as (C)V, i.e., as open syllables with short vowels. She specifically states that syllable-initial consonant(s) do not contribute to the weight of the syllable.

Ohsiek observes that the claim of Trubetzkoy (1939) and others regarding the basic principle of stress assignment in any language with word-level stress, is that only one syllable per word receives the primary stress. It may sometimes be possible that a word contains more than one heavy syllable, but even in languages with heavy syllable stress rules, there is one single main stress per word.

Ohsiek also explains at length the affinity between stress and heavy syllables, both from the phonetic (acoustic) and the phonological points of view. Acoustic features of relatively greater duration, increased fundamental frequency, and relatively greater intensity or amplitude are considered to be significant perceptual correlates of stressed syllables. Heavy syllables,

even in unstressed position, are generally longer, higher in pitch and/or louder than light syllables. In such circumstances the stress assignment to a word with heavy syllables usually favours the syllable that already contains these phonetic features in the highest degree. Light syllables usually remain unstressed in the environment of heavy syllables. When a light syllable is stressed, it can no longer be perceptually differentiated from a heavy syllable as it would have the same duration as a heavy syllable.

A heavy syllable and a stressed light syllable are phonetically similar in such cases. The syllables and their types merge in these cases. Incidentally, this phonetic explanation is also relevant with regard to word-final short vowels being perceptually noted as relatively long in Telugu speech. The short vowels in word-final position have a secondary stress. For example:

'kiṭiki realised as ['kiṭi,ki:] 'window'

'go:ci realised as ['go:ci:] 'loin cloth'

Light unstressed syllables tend to have reduced vowels. In the dichotomy of heavy/light syllables, full vowels are opposed to reduced vowels in assigning stress placement. Stress regularly falls on the syllable containing the last full vowel in the word. If all the vowels of a word are reduced ones, then the stress occurs on the initial syllable. Ohsiek observes, (ibid.:36), that this is generally the situation in languages.

It is generally observed that the acoustic feature of greater duration is shared by both the stressed syllables in general and those heavy syllables containing long or double or diphthongised vowels.

3.2.8.1

Syllable Types and Stress in Telugu

Contrary to Ohsiek (cf. 3.2.8), I require to treat (C)(C)V and VC as

light syllables in Telugu. All other syllable structures are treated as heavy, e.g., $C\bar{V}$, $CV\overset{\frown}{C}$. This is in keeping with the traditional view of heavy and light syllables in Telugu.

Telugu utilises a nearly exceptionless version of a heavy syllable stress rule. If the rule is not observed meticulously by the speaker, then the rhythmic pattern of the language is lost.[9]

A comprehensive set of syllable rules can be suggested as follows:

1. If the syllable is open-ending in word-initial or -medial positions, it can be either long (heavy) or short (light).

$C\bar{V}$-CV		$C\bar{V}$-CV-CV	
ka:-lu	'leg'	ro:-ka -li	'pestle'
pa:-ka	'shed'	mu:-ga-di	'dumb woman'
pu:-lu	'flowers'	CV-$C\bar{V}$-CV	
ko:-ta	'cutting'	pa-ta:-ka	'flag'
ke:-ka	'shout'	ca-ṭa:-ku	'a measure (obs.)'
gi:-ta	'line'	pa-ṭe:-lu	'village officer'
CV-CV		CV-CV-CV	
ma-ri	'then'	ka-nu-ka	'therefore'
ku-ti	'inquisitiveness'	ga-ḍa-pa	'threshold'
po-li	'God of harvest'	go-ḍa-wa	'noise'
goḍa	'bamboo'		

Word-final syllable ending in [w̃] which is treated phonologically as V ending syllable, is not an exception to the rule.

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9. As a result of this, the speaker is aware of all other dialect variations where the rule does not apply fully.

Word-final open syllables are more frequently short. Word-final long [i:, a:, u:] are common, but [e:, o:] are not. The word-final syllable has secondary stress and this is perceived as length. That is precisely the reason for Sastry (1972:51) observing three vowel quantities, viz.: short, half-long and long. The word-final short vowel which has secondary stress, is perceived as a half-long vowel. This phenomenon is more evident in the case of trisyllabic forms.

2. A geminate consonant separates the two syllables in a disyllabic word. The preceding syllable is always short. In other words, a consonant sequence -CC- which is to be split into two syllables in succession, will only follow a short vowel. For example:

CVC-CV

bal-la	'table'	pak-ka	'bed'
kal-lu	'liquor'	kot-ta	'new'
gaḍ-ḍi	'grass'	paṭ-ṭu	'silk'
can-nu	'breast'	met-ta	'quilt'

Trisyllabic and tetrasyllabic forms are no exception to this rule. For example:

CV̄-CVC-CV	mæ:-nat-ta	'paternal aunt'
CVC-CV-CV	cel-le-lu	'younger sister'
CVC-CV-CVC-CV	boḍ-ḍu-mal-le	'a kind of jasmine'

From the above examples it is seen that long vowels do not precede long consonants, but in the Brahmin dialect of Telugu some exceptions to the rule may be found. For example:

Brahmin Dialect	Others	Gloss
na:n-na	na:-na	'father'
ba:m-ma	na:-na-ma	'grandmother (paternal)'

Such cases of long vowel preceding a long consonant are restricted (as far as I can see) to kinship terms, and the long consonant is invariably a nasal.

3. If the consonant sequence is non-geminate, both long and short vowels can precede. For example:

$\underline{\bar{C}\bar{V}C\text{-}CV}^{nr}$

ra:ʈ-ɳaw̃ 'spinning wheel'

ka:s-ʈaw̃ 'fireplace'

$\underline{\bar{C}\bar{V}C\text{-}CV}$

ga:ɖ-pu 'gale'

$\underline{\bar{V}C\text{-}CV}$

o:r-pu 'patience'

e:ɖ-pu 'crying'

3.2.9

Stress Assignment

A heavy syllable will have full articulations, whereas a light syllable will have reduced timing. Reduction in articulatory timing correlates with central vowel quality generally. The vowel may be lost completely, thus giving rise to internal Sandhi.

In trisyllabic words of Telugu, the second syllable which is light and unstressed is susceptible to loss and gives rise to many new combinations of consonants in the language (cf. 6.2.3).

In many dialects of spoken colloquial Telugu, stress is assigned according to the rules already described. At this juncture I propose a main word stress rule to cover light and heavy syllables. The rule is as follows: In words of three syllables, main word stress appears on the initial syllable if there are no heavy syllables in the word, and

this is the most common pattern. If there are heavy syllables in the word, then the position of the stress is on the first heavy syllable of a word whether it is initial or not. Words shorter than three syllables (i.e., disyllabic words) are stressed word-initially if both the syllables are light, or the first syllable is heavy. If the first syllable is light and there is a heavy final syllable, both syllables have equal stress. A light syllable in the word-final position may also exhibit some acoustic features of a heavy syllable if the vowel is close or open, but not if it is mid.

CHAPTER FOUR

COMPOUND NOUNS AND RHYTHM

4.0.1

Introduction

It has been noted by many phoneticians that variations in the use of stress cause different languages to have different rhythms. Ladefoged (1975:222) states that because of phrase-final syllables having a different stress and others sharing the feature of equal stress, French utterances give the impression of evenness in rhythm. Based on his observations, Ladefoged attempts to divide languages into types on the basis of a three-way typological classification of rhythm differences (see 3.1.9). However, none of the classifications fit the Telugu language, although certain aspects of some of them are relevant.

Rhythm in English and various other stress languages - though not in all - is based on the stressed syllable (O'Connor 1973:197). But the rhythm in syllable-timed languages is a different phenomenon. O'Connor (1973:239) observes that in French and Hindi the rhythm is syllable based. I believe that this is the type to which Telugu belongs.

De Groot (1968) comments that rhythm is frequently used for any kind of repetition or periodicity in the physical world, also for any kind of correspondence in aesthetic experience and, generally, for practically anything connected with experiences as long as it is not clearly defined. Rhythm is defined as an isochrony of successive intervals. He notes that the word rhythm has often been used for other than audible phenomena. It is noted that in definitions of the modern term 'rhythm', both generally and in its specific reference to language, the motor factor has been

repeatedly emphasised. Abercrombie (1964) states that all rhythm, it seems likely, is ultimately rhythm of bodily movement. The term rhythm for these scholars and many others has been considered more as representing a physical phenomenon. I draw attention to these scholarly works to emphasise the fact that mere physical properties are not enough to define rhythm.

Allen (1973:96-102) states that the term rhythm comes to be applied to the patterns of intervals between movements rather than to the qualitative pattern of the movements themselves. I quote Allen (ibid.:97) for a clear definition of rhythm here:

> ...the term rhythm comes to be applied to the pattern of intervals between movements, or between their beginnings or peaks, or to the pattern of the movements themselves; and through the intermediary of song this qualitative conception of rhythm is often transferred from the context of music to that of the linguistic art of poetry, and thence to language itself, until finally duration has sometimes been conceived as the primary parameter of rhythmic definition.

Allen mentions Ezra Pound (1951) who recognises poetic rhythm as 'a form cut into time, as a design is determined by space'. He also states that syllables have not only differing durations but also different weights, and these factors constitute the medium for the poet with the help of which he is able to cut a design. These observations of Ezra Pound and Allen are more relevant for my discussion of rhythm in Telugu. In this chapter I restrict my study of rhythm to the analysis of the Telugu compound nouns and their formation. Scholars who probed into compound word formation in Telugu earlier, never considered the phonetic aspect of the formation. I present a brief survey of their work in the sections that follow. Later it is also aimed to present a phonetic-phonological-semantic view of the formation of nominal compounds in Telugu.

4.1.0

Types of Compound Nouns

Reduplication and echo word formations are generally treated under the heading of compound nouns. In addition to these, there are other forms of nouns, which when joined together form a compound word which includes the meaning of conjunctive 'and', but without the conjunctive being present. For example:

anna 'elder brother'

tammudu 'younger brother'

can form a compound together with the plural suffix -lu, i.e., annadammulu, which gives the meaning of 'elder and younger brother', or 'brothers' in general. Another compound form is anna:tammudu: 'elder and younger brother'. The reason for t>d is explained under Sandhi in Section 6.1.6.

A brief survey of the work done on the topic is now given, together with a critical analysis. Scholars whose work is considered are Bhaskara Rao (1977), Radhakrishna (1981), and Krishnamurti and Gwynn (1985). It is clear from the works of Bhaskara Rao and Krishnamurti and Gwynn that their main aim is to present a semantic and grammatical viewpoint respectively. The basic notion, i.e., the phonetic-phonological reason behind the formation of nominal compounds which can contribute towards an understanding of rhythm in Telugu is left out by all the scholars. Radhakrishna tries to achieve some sort of simplicity, but unfortunately it is at the cost of 'social confusion'.

4.2.0

Bhaskara Rao's Analysis

Bhaskara Rao (1977) in his note on reduplication in Telugu observes

that the reduplication process is used for bringing out various subtle meaning differences, and includes echo words under reduplication. He refers to the work of Mahadeva Sastry (1954) who made an extensive study of intensive and inclusive compounds in Telugu.[1] Bhaskaya Rao claims that his definition of reduplication is different from that made by Apte (1968), who made a general survey of the definitions of reduplication, echo words and onamatopoeia for Marathi, an Indo-Aryan language of Western India. It differs in that Bhaskara Rao treats echo-word formation as a part of reduplication, whereas Apte treats reduplication as different from echo-word formation.

4.2.1.1

Reduplication

According to Bhaskara Rao, forms belonging to several different grammatical categories can be reduplicated. A reduplicated form mainly denotes some repeated action, or the happening of something over a large area or a large span of time, as well as generalisation (equal to English: (< Latin) et cetera). Bhaskara Rao describes the various grammatical forms undergoing reduplication at length. These forms have additional meaning attached to the original meaning of the form, i.e., the concern of semantics. The examples he gives have partial reduplication of the first part with the usual Sandhi. They are:

lo:pala 'inside'

lo:pala + lo:pala ——————> lo:pallo:pala 'deep inside'

paina 'above'

paipaina 'on the top, superficially'

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1. Unfortunately, this work is not available to me.

4.2.1.2

Echo-word Formation

Under this heading Bhaskara Rao treats forms, where, in the process of reduplication, part of the word is replaced by a stretch of sounds which are predetermined. These are known as echo syllables. This gives rise to partial reduplication or echo formation (ibid.:6). In echo words, the first part is the main form and the second part is the echo form, that is to say, the reverse of what he calls reduplication. Bhaskara Rao states that echo words also imply some degree of generalisation of the meaning expressed by the main word. He classifies echo formation under the following five groups.

I. The first type is generalised as (C)(C)V(:)x-gi(:)x, and is used in negative and interrogative expressions only. For example:[2]

kla:su gi:su

annam ginnam

pelli gilli

u:ru gi:ru

kla:su gi:su ti:suko:nu 'I do not take a class (or any such)'

annam ginnam tinanu 'I won't eat food etc.'

pelli gillice:sukonna:wa? 'Did you get married?'

u:rugi:ru cu:śewa:? 'Did you see the town?'

If the first syllable of the original word begins with a single consonant, or consonant cluster, or only a vowel (either short or long), the echo word will have the syllable [gi(:)]; the length of the vowel of this syllable depends on the length of the first syllable vowel of the original word. Some further examples are given below.

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2. The examples under the echo formation rule are those of Bhaskara Rao. For the benefit of the readers, I have put them into sentences and given the meaning.

a:ku	'leaf'	a:kugi:ku	'leaf, etc.'
a:kali	'hunger'	a:kaligi:kali	'hunger, etc.'

Bhaskara Rao cites the observations of the traditional grammarian Chinnaya Suri, who explicitly states that 'In derogatory forms, reduplication takes place in which the second part contains [gi] or [gi:] as a replacement of the first syllable'.

II. In this type, the echo word initial syllable is invariably [gi(:)], whether the first word has one or many or no initial consonants. For example:

gudi	'temple'	gudigidi	'temple, etc.'
ga:li	'wind'	ga:li gi:li:	'wind, etc.'

According to Bhaskara Rao, the only exceptions to this generalisation are forms where the initial syllable is [gi] or [gi:]. In such cases [gi(:)] is avoided and is replaced by [pi(:)] in the echo word, as in:

gilaka	'rattle (toy)'	gilaka pilaka	'rattle, etc.'
gi:ta	'line'	gi:ta pi:ta	'line, etc.'

However, I am not familiar with these forms in the dialect which he is describing, that is the Kalinga dialect.

III. To this type belong a limited number of cases where echo syllables of the forms [go], [sa] and [so] occur.

Examples:

nasugu gosugu	'hesitation, etc.'
udyo:gam sadyo:gam	'job, etc.'
be:ram sa:ram	'bargaining, etc.'
appu soppu	'loan, etc.'
antu sontu	'impurities, etc.'
alupu solupu	'tiredness, etc.'

IV. Echo words which are formed by putting [putra] or [natra] as the second part are placed in this group. Bhaskara Rao gives rules for selection of these forms, as follows:

i) If the first noun form has an initial bilabial sound, putra is used as the second form;

ii) If the first noun has initial [n] then natra occurs as the second form. Bhaskara Rao, however, has given only one example for natra.

purugu	'insect'	puruguputra	'insect, etc.'
puli	'tiger'	puliputra	'tigers, etc.'
polam	'field'	polamputra	'field, etc.'
bhu:mi	'land'	bhu:miputra	'land, etc.'
naga	'ornament'	naga:natra	'ornaments, etc.'[3]

V. In this type Bhaskara Rao places his echo formation with [gatra] as the second form which can be added to nouns.

Examples:

pe((i	'marriage'	pe((igatra	'marriage, etc.'
ḍabbu	'money'	ḍabbugatra	'money, etc.'

Bhaskara Rao's survey also gives other types of compound forms. These are not considered here for the reason that they involve only semantic aspects but not the phonetic and phonological aspects of the language. He also includes one type of compound formation in which words of different shape but similar meaning take part which, according to him, Mahadeva Sastri treated as coming under a process known as intensive or inclusive compound formation. The meaning conveyed by these compound forms is 'generality of

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3. Bhaskara Rao makes no comment on the vowel length in the first noun-final position and in the echo-word final position.

the concept'. The two nouns in this type of compound are joined by a conjoining particle of length. This particle of length, however, is only seen when the noun ends in a vowel. Bhaskara Rao observes that the length is sometimes not prominent in colloquial fast speech, and Mahadeva Sastri attributes the status of stress to this feature of lengthening.

Examples:[4]

siri + sampada + lu ——> sirisampadalu 'riches'

'money' 'wealth' siri:sampadalu

a:ṭa + pa:ṭa + lu ——> a:ṭapa:ṭalu 'general merriment'

'play' 'song' a:ta:pa:ta:

4.2.2

Critical Evaluation

The data presented by Bhaskara Rao under the heading of reduplicated compounds (which according to him also contain the data of Mahadeva Sastri), will now be subjected to critical analysis. Additional data will be included wherever it is felt necessary. Some relevant phonetic/phonological observations are made before presenting a new analysis.

Under reduplication, Bhaskara Rao has proposed that forms with partial reduplication, or echo words, denote the sense of repeated action and other such activities. He has given examples[5] of forms like:

lo:pala + lo:pala ——> lo:pallo:pala

paina + paina ——> paipana

but has not given any rules for this. According to my data, in such forms where partial reduplication takes place, it is only the initial syllable of the word which is reduplicated. Bhaskara Rao's second example agrees with

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4. Bhaskara Rao does not mention -lu, but it is shown here to explain the compound form. He says nothing about the conjoining function of -lu.
5. For meanings, refer to 4.2.1.1.

this rule of mine, but not his first. In fact, my data for the same dialect show forms like:

'lo:pala + 'lo:pala ——> 'lo:lo:pala

'paina + 'paina ——> 'paipaina.

Bhaskara Rao only gives examples with partial reduplication. I know some other forms where reduplication is possible in full. Examples are:

mi:da	'above'	mundu	'before/future'
mi:da mi:da	'superficially'	mundumundu	'right in front/in future'

Bhaskara Rao treats echo-word formation as a process under reduplication where part of the word is replaced by a stretch of sounds which are predetermined. In other words, the echo syllables are fixed. Although he classifies the forms under I and II, the only difference between the two types seems to be semantic and grammatical, but not phonological.

Further, the type of onset in I and II seems to be completely irrelevant when echo formations take place. Under Rule III of echo-word formation Bhaskara Rao discussed [go], [sa:] and [so] as echo syllables. It is my firm belief that in most of these cases the echo words (either in their existing form, or in a different form) had some relevant connected meanings which later became obsolete and lost in usage. The following examples will make this observation clear:

goddu + go:da ——> goddu:go:da

'cattle' ? 'cattle'

ra:ta + ko:ta +lu ——> ra:tako:talu

'writing' ? 'correspondence'

In the case of the examples given by me above and those provided by Bhaskara Rao under his Rule III, in echo-word formation the first syllable is

replaced by [go], [sa:] and [so]. At least in the examples provided by me there is some sort of rhyme and rhythm, but nothing in the case of Rao's examples. There is no reason why the following changes should take place:

Word-initial Syllable	Echo-word Initial Syllable
na-	go-
u-	sa-
be:-	sa-
a-	so- (three examples)

Bhaskara Rao neither attempts to give semantic reasons nor phonetic/phonological reasons for this. Besides my semantic explanation offered above, I present a phonetic/phonological solution here.

From the examples of Bhaskara Rao it seems that [sa], [sa:] and [so] are the commonest echo-word initial syllables, and only one example of [go] is available. In this single instance it may be possible that SV was avoided because the following syllable is also -SV.

Now I rewrite the same examples in prosodic formulae, which will enable me to explain the harmony in the echo-word initial syllable.

nasugu gosugu	$N\alpha^{W}$ S ι^{W} P ι^{W} P ε^{W} S ι^{W} P ι^{W}
udyo:gam sadyo:gam	ι^{W} C C $\bar{\varepsilon}^{W}$ C α^{W} N C α^{W} C C $\bar{\varepsilon}^{W}$ C α^{W} N
be:ram sa:ram	C $\bar{\varepsilon}^{Y}$ C α^{W} N C $\bar{\alpha}^{W}$ C α^{W} N
appu soppu	α^{W} C C ι^{W} C ε^{W} C C ι^{W}
antu sontu	α^{W} C C ι^{W} C ε^{W} C C ι^{W}
alupu solupu	α^{W} C ι^{W} C ι^{W} C ε^{W} C ι^{W} C ι^{W}

A general rule can be formulated as follows: When the original word-initial syllable is replaced in the echo word and initial syllable, the following restrictions apply for it:

i) If the word-initial syllable has a high vowel nucleus followed by a mid-vowel nucleus in the next syllable, then the echo word

will have SV- where V is a low open vowel.

Examples:

udyo:gam sadyoogam	'job, etc.'	ఉద్యోగం సద్యోగం
upo:ṣam sapo:ṣam	'fasting, etc.'	ఉపోషం సపోషం

ii) If the word-initial syllable has a mid vowel followed by a low vowel in the next syllable, then in the echo word mid vowel will be replaced by low open vowel.

Example:

be:ram sa:ram	బేరం సారం

iii) If the word-initial syllable has a low open vowel followed by a high close vowel in the next syllable, the echo-word initial syllable will have mid vowel. Examples:

appu soppu	అప్పు సొప్పు
antu sontu	అంటు సొంటు
alupu solupu	అలుపు సొలుపు

These rules can be expressed as follows: in a word of disyllabic or trisyllabic structure where V_1 is ఉ (high); V_2 is ఎ (mid) and V_3 is అ (low)

Original Word	Echo Word	Compound Form will Have the Structure
$V_1 - V_2$	$V_3 - V_2$	$V_1 - V_2 - V_3 - V_2$
$V_2 - V_3$	$V_3 - V_3$	$V_2 - V_3 - V_3 - V_3$
$V_3 - V_1$	$V_2 - V_1$	$V_3 - V_1 - V_2 - V_1$

Bhaskara Rao places the forms with puṭra, naṭra in his Rule IV. He is able to give some examples for puṭra, but only one for naṭra. This rule differs from Rule V in the sense in that words with bilabial C in initial position take puṭra in echo-word formation, and those with a

dental C take natra, whereas under Rule V all the forms irrespective of initial C take gatra. In other words, one may conclude that in Rule IV the word-initial syllable onset plays a role in echo-word formation, whereas in Rule V it does not. I have an additional example to show that this observation of mine is correct.

ravika 'blouse'

ravikaratra 'blouse, etc.'

The gatra form has a meaning in Telugu almost equal to 'et cetera' in English. Interestingly, it is observed that gatra cannot occur in place of putra or natra without altering the noun form.

puli putra but not * puligatra

naga:natra: but not * naga:gatra

It may be observed that pululu:gatra: nagalu:gatra: occur, that is, gatra can be used after adding a plural suffix to the noun. The lengthening of the word-final vowel and echo-word final vowel is of considerable importance. As already mentioned, Bhaskara Rao notes this, but offers no explanation.

Bhaskara Rao considers other types of compound nouns, that is, nouns which may or may not have word-final vowel lengthening when conjoined together. He mentions this, but does not consider a phonetic explanation. I propose a rule in the later parts of this chapter (see 4.5.1).

4.3.0

Compound Formation Rules of Radhakrishna

Eenaadu is a Telugu daily newspaper published in the capital of Andhra Pradesh, and also simultaneously in Visakhapatnam, Tirupati and Vijayawada.

Publication of the newspaper began in the mid-seventies and within a short space of time it established deep roots. Although there have been many other Telugu newspapers in past years, they do not appear to have exerted any influence either on the language or on linguistic style. Eenaadu is the first newspaper to make an attempt at setting rules for Telugu newspaper language.[6]

Radhakrishna, who was invited to suggest what form of language should be used, made an analysis of Telugu and its stylistic variations. He made certain observations with regard to language use, certain prescriptions for budding journalists in Telugu, and certain other linguistically relevant facts. My main interest in his work is in the section dealing with compound forms in Telugu, from the phonetic and phonological viewpoint. A summary of Radhakrishna's analysis of compound formation is given below.

Radhakrishna gives five rules to explain compound word formation. The examples given here are those given by him.[7]

1. When two noun forms are joined to make a compound, the forms observe 'alphabetical order', as in the example below.

ra:ma	+	laksmaṇa	+	lu	⟶	ra:malaksmaṇulu
'Rama'		'Lakshmana'		pl		'Rama and Lakshmana'

The words in the compound form are in their sequence because r comes earlier than l in the Telugu script, hence Laksmana cannot occur in the first place.

2. If, of the forms being combined, one is of the feminine and the other of the masculine gender, then generally the feminine gender form occupies the first place. The example cited for this is:

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6. Iinaadu bhaasaa swaruupam, 1981.
7. Radhakrishna did not show word and morpheme division, but this is shown for all his examples for the benefit of readers not familiar with Telugu. He does not give -lu as part of a compound, although it is an essential part in some types of compound word formation.

si:ta	+	ra:ma	+	lu	——>	Si:ta: ra:mulu
'Sita'		'Rama'		pl.		'Sita and Rama'

3. If both the nouns happen to belong to the feminine gender or when the feminine form is longer than the masculine form, then the form with fewer syllables will occupy the first place. Examples are:

kr̥ṣṇa	+	go:da:vari	+	lu	——>	Kr̥ṣṇa:go:da:varulu
'Krishna'		'Godavari'		pl.		'Krishna and Godavari (rivers)'

nala	+	damayanti	+	lu	——>	Naladamayantulu
'Nala (m)'		'Damayanti (f)'		pl.		'Nala and Damayanti'

4. If both forms have the same semantic features, then the noun which carries the more prestigious value will occupy the first place. Examples are:

ganga	+	kr̥ṣṇa	+	lu	—— >	ganga:kr̥ṣṇalu
'Ganga'		'Krishna'		pl.		'Ganga and Krishna (rivers)'

(Radhakrishna notes that Ganga is more prestigious than Krishna.)

5. The vowel is not lengthened at the end of Sanskrit masculine and neuter nouns, when compounds are formed. For example:

ra:ma	+	lakṣmaṇa	+	lu	——>	ra:malakṣmaṇulu
'Rama'		'Lakshmana'		pl.		'Rama and Lakshmana'

(but not *ra:ma:laksmanulu).

Contrary to the above rule, feminine nouns in compound formation have a word-final long vowel. For example:

indira	+	priyadarśini	——>	indira:priyadarśini
proper name		proper name		name

(but not *indira priyadarśini).

In this section of his monograph Radhakrishna deals with several other grammatical categories. Only the above rules are relevant for my study.

4.3.1

Critical Evaluation

Rules proposed by Radhakrishna are subjected to critical analysis in this section, and it is shown how they are not adequate. A major omission in the rules is that Radhakrishna does not mention the function of the plural suffix -lu in compound formation, although most of his examples show this.

Radhakrishna's first rule relates the order of words forming compounds to the sequence of the symbols in the syllabary of the Telugu language. In the example selected by Radhakrishna it so happens that r occurs earlier than l in the sequence in the syllabary, and thus he is able to show the sequence in his one example. What happens when we take other examples is anybody's guess, i.e., the rule does not apply.

ra:ma		krsnudu	+	lu	⟶	ra:makrsnulu[8]
'Rama'		'Krishna'		pl.		'Rama and Krishna'
bhi:ma	+	arjunudu	+	lu	⟶	bhi:ma:rjunulu[9]
'Bhima'		'Arjuna'		pl.		'Bhima and Arjuna'

It is evident that the order of occurrence in a compound noun form is not based on order of the syllabary, i.e., there are many examples which do not follow the syllabary sequence, even given the constraints of the other rules.

The second rule that the word of feminine gender comes first in the sequence gives an overall picture that Telugu speakers and their social habits are very polite towards the fair sex. The example selected by Radhakrishna is such that his rule applies. But it is not true with some forms, like:

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8. In the examples that follow k comes before r in the syllabary, and a comes before bh.
9. The Sanskrit proper noun forms had krisnudu, arjunudu, etc., with a -du first masculine suffix. In plural forms -u is replaced by -lu.

siva + pa:rvati + lu ——> sivapa:rvatulu

'Siva' (m) 'Parvati' (f) pl. 'Siva and Parvati' (m) (f)

kaca + de:vaya:ni + lu ——> kacade:vaya:nulu

'Kaca' (m) 'Devayani' (f) pl. 'Kaca and Devayani' (m) (f)

However, Radhakrishna's Rule 3 which states that the form with fewer syllables occupies the first position if both the forms are of the feminine gender or if the feminine form has more syllables than the masculine, comes to his rescue to cover the examples cited above. In my view this is the only relevant observation. There is no need for a separate Rule 2. It is only the number of syllables in each word which plays a dominant role in their position in a compound noun.

Radhakrishna's Rule 4 introduces the feature of prestige, which many examples contradict. Radhakrishna cites the example

ganga + kr̥ṣṇa + lu —— > ganga:kr̥ṣṇalu

'Ganga' 'Krishna' pl. 'Ganga and Krishna (rivers)'

and takes the view that ganga is the more prestigious river. If this notion of prestige is to be accepted, then in the form

kr̥ṣṇa + go:da:vari + lu ——> kr̥ṣṇa:go:da:varulu

'Krishna' 'Godavari' pl. 'Krishna and Godavari (rivers)'

kr̥ṣṇa must be the more prestigious, but these rivers have equal standing. The fact is that it is not social factors that contribute to compound formations, but phonetic and phonological factors. The application of the social feature of prestige can only add to the already existing long list of problems. As such, Rule 4 proposed by Radhakrishna is unnecessary and irrelevant. Rule 3 which talks of number of syllables and their importance in compound formation is also applicable here.

In his Rule 5 Radhakrishna makes a distinction between the feminine and non-feminine forms in relation to word-final vowel lengthening. There is no need to give this gender distinction since there are cases like:

go:pa:lu + go:vindu + lu ——> go:pa:lu:go:vindulu

'Gopal' (m) 'Govind' (m) pl. 'Gopal and Govind'

in which both forms are masculine nouns, but the first word-final vowel is still lengthened, as also in sita:ra:mulu, 'Sita and Rama'. This lengthening process needs detailed study (see 4.6.0).

4.4.0

Compound Words as Described by Krishnamurti and Gwynn

Krishnamurti and Gwynn (1985:326) give a general rule for noun compounds which is different from rules given by others. They note that when the nouns functioning as subject and predicate are compounded, the plural suffix is added to the second noun and the final vowel of the first noun is lengthened denoting the 'and' relationship. They cite the following examples:[10]

talli + tandri + lu ——> tallidandrulu[11]

'mother' 'father' pl. 'father and mother'

anna + wadine + lu ——> anna:vadinelu

'elder brother' 'sister-in-law' pl 'elder brother and his wife'

atta + ma:ma + lu ——> atta:ma:malu

'mother-inlaw' 'father-in-law' pl. 'mother-in-law and father-in-law'

ba:wa + maridi + lu ——> ba:wa:marudulu

'elder brother-in-law' 'younger brother-in-law' pl. 'brothers-in-law'

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10. Krishnamurti and Gwynn do not show word and suffix divisions. I have added this here for the benefit of non-Telugu readers.
11. There is no lengthening of the vowel in this case which conflicts with the rule. This is not noticed by Krishnamurti and Gwynn.

It is further noted by Krishnamurti and Gwynn that such items have lost their syntactic origin and have become lexicalised as nominal compounds. For instance, they cite the following sentences:

ataniki mugguru akka:cellelu 'He has three sisters' (elder and younger)

me:m naluguru anna:dammulam 'We are four brothers' (elder and younger)

In these forms it is not possible to derive the compound words from underlying clauses through conjunction.

4.4.1

Comments

I do not totally accept the forms given by Krishnamurti and Gwynn. Examples of the forms cited by them that I have in my data and use in my analysis are slightly different. The reason for this is the rhythmic differences intended by the speakers.

Krishnamurti and Gwynn note the presence of word-final vowel length in the first word of a nominal compound. They give grammatical status to it and describe it as a conjoining particle 'and', but they say nothing about the absence of length in certain other compounds of the same type. After making a general rule about the addition of the plural suffix to the second noun and the lengthening of the word-final vowel of the first noun, they start listing examples. The very first example is an exception to the rule. It passes unnoticed. Similarly, Krishnamurti and Gwynn say nothing about medial voicing in the case of tammudu which becomes dammulu.

4.5.0

Proposed Rules for Compound formation and Sequence of Words in Compounds

In this section I present two sets of rules, one for the formation of compounds, and one for the sequence of words in compounds. The rules for the formation of compounds are classified in such a way as to relate them to different semantic groups.

Compound nouns and echo-word formations are used widely in the Coastal dialect of Telugu. Echo words are present to a minimum degree in the Rayalaseema dialect and are totally absent in the case of the Telangana dialect. Compound nouns are less common in the Telangana dialect and present a separate pattern.

As noted earlier in 4.4.1, I have slightly different forms of compounds in my data (as well as in my dialect) from those of Krishnamurti and Gwynn. The forms are:

1. akka + cellelu + lu ——> akkajelle ~~lu~~ 'sisters'
2. anna + tammuḍu + lu ——> annadammulu 'brothers'
3. talli + taṇḍri + lu ——> tallidaṇḍrulu 'parents'
4. atta + ma:ma + lu ——> attama:malu 'parents-in-law'
5. ba:va + maridi + lu ——> ba:vamarudulu 'brothers-in-law'

These are all kinship terms. There can also be some forms which are not kinship terms (see example 7 below). These forms are taken as a basis for my description of compound word formations. Let us take the examples:

6. 'talli + 'taṇḍri + 'lu ——> 'talli,daṇḍru,lu
   'mother' 'father' pl, 'mother, father'
7. 'siri + 'sampada + 'lu ——> 'siri,sampada,lu
   'wealth' 'money' pl. 'riches'

The above examples can also be realised as:

6a. 'talli + 'tandri ——→ 'tal,li;'tandri:

7a. 'siri + 'sampada ——→ 'si,ri:'sampa,da:

When the word-final vowel of the first noun is lengthened, the same happens in the case of the second noun, and -lu is not added at the end of the compound form. If the plural suffix -lu is added to the second noun, the first noun may or may not have any lengthening of the final vowel. Thus we have three possibilities:

1. Lengthening of the first and second nouns, as in example 'an,na:'vadi,nɛ: 'elder brother - sister-in-law';
2. Lengthening of first noun and addition of -lu to the second noun as in example 'an,na:'vadinɛlu 'elder brother - sister-in-law'; and finally,
3. No lengthening of first and second noun but addition of -lu at the end of second noun, as in example 'anna vadinelu (ibid.)

This vowel length, we are given to understand by Bhaskara Rao, was noted by Mahadeva Sastry who attributed it to stress, because for him obviously length of vowel corresponds to stress.

4.5.1

Functions of Vowel Length

i) Vowel length when added at the end of the first noun gives the meaning of conjoining particle:

'an-,na: ,va-di-,nɛ:

The first noun has two syllables and the second three syllables. The second syllable of the second noun is unstressed. Hence in some speakers' usage it may be realised as

'an-,na: -va-,dnɛ:

ii) When no vowel length is added at the end of the first noun, it is possible to add a plural suffix at the end of the second noun.

'an-na-'va-di-nɛ-lu.

The vowel of the second syllable of the second noun is generally lost and the resulting form in this case is:

'an-na-'va-dnɛ-lu

iii) The third alternative is vowel length at the end of the first noun and -lu plural suffix at the end of the second noun. The second syllable of the second word, which is unstressed, is lost and we get a form like

'an-ˌna:-va-ˌdnɛ-lu

From the above account it is clear that compound formation differs in three possible ways. These can be summarised as follows:

1. The first word will have fewer syllables than the second word, and in the case of the above example, it is observed that the first word has two syllables, whereas the second has three.
2. After compound formation, the compound noun will have the initial syllable stressed, on the lines of any other word. The second syllable of the compound noun, if containing a long $\bar{V}$, will bear secondary stress (see 1,3 above). The third syllable of a compound word will have primary stress if the preceding syllable is unstressed (see 2 above). The third syllable of a compound noun will also have a secondary stress if it is preceded by a secondary stressed syllable and followed by an unstressed light syllable. If the following syllable is heavy, the secondary stress on the third syllable is not present (see 1, 3 above). The fourth syllable and fifth syllable, which are generally reduced to form a single syllable, will have secondary stress if the syllable ends in a long vowel (see 1 above), and is not

followed by another syllable. The compound word final syllable -lu plural suffix will not have any stress.

Keeping this general framework before us, let us now formulate the rules for compound formation in Telugu.

4.5.2

Formation of Compounds: Suggested Rules

These rules are related to different semantic fields.

Compounds may be formed by the juxtaposition of two nouns either with the plural suffix -lu added to the second noun, or without the suffix -lu. This rule is common to Coastal and Rayalseema dialects.

I. Compoundswith -lu: Mythological characters and kinship terms come under this rule.

i) The final vowel of the first word may be lengthened. Examples are shown below.

First Noun	+ Second Noun	+ Plural Suffix	⟶ Compound Form	Gloss
'si:ta	+ 'ra:mudu	+ lu	'Si:,ta:,ra:mulu	'Sita and Rama'
'ra:dha	+ 'krsnudu	+ lu	'ra:,dha:,krsnulu	'Radha and Krishna'
'koduku	+ 'ko:dalu	+ lu	'ko,d(u)ku:- ,ko:da,lu	'son and daughter-in-law'
'amma	+ 'na:nna	+ lu	'amma:- ,na:nnalu	'mother and father'
'bha:rya	+ 'bharta	+ lu	'bha:r,ya:- ,bhartalu	'wife and husband'

ii) The length of the final vowel of the first word is unchanged.

'su:rya	+ 'candra	+ lu	'su:rya,candrulu	'sun and moon'
'siva	+ 'pa:rvati	+ lu	'siva,pa:rvatulu	'Siva and Parvati'
'talli	+ 'tandri	+ lu	'talli,dandrulu	'mother and father'

II. Compounds without - lu: Some mythological characters and also some body part come under this rule.

i) Without vowel lengthening

This is the most common pattern in Telangana dialect for describing body parts. Examples are shown below.

Mythological characters

First Noun	+ Second Noun	——> Compound Form	Gloss
'kaca	+ 'de:va,ya:ni	'kaca ,de:vaya:ni	'Kaca and Devayani'
'nala	+ 'damayanti	'nala ,damayanti	'Nala and Damayanti'
'ra:ju	+ ra:ṇi	'ra:ju ,ra:ṇi	'king and queen'

Body parts

'sakalam	+ 'mukalam	'saklam ,muklam	'a lotus posture' (of sitting)
'ka:lu	+ ceyyi	'ka:luceyyi	'leg and hand'

ii) Lengthening of final vowels of both the words is possible. This rule applies to body parts.

'netti	+ 'no:ru	'netti: ,no:ru:	'head and mouth'
'ka:lu	+ 'ceyyi	'ka:lu:,ceyyi:	'leg and hand'

III. Echo Words: partly meaningful and both parts meaningful

These are formed by two different processes.

i) The first noun is followed by another noun which may or may not have independent existence (i.e., other than compound word) in the language. Even if they have independent occurrence, they may lack relevance in the compound form. For example:

pilla 'child' pi:cu 'fibre'

pilla:pi:cu: 'children and other attachments'

pani 'work' pa:ṭa 'song'

pani:pa:ṭa: 'workmanship'.

The following examples illustrate that the echo words do not have any meaning independently. They do not occur in isolation.

ma:ṭa 'talk' manti '?'

ma:ṭa:manti: 'chat, talk'

ra:yi 'stone' rappa '?'

ra:yi:rappa: 'stones and pebbles'

ii) The other type of echo-word formation involves those words where the echo form is totally meaningful, both within the compound and in isolation. For example:

u:ru 'village' pe:ru 'name'

u:ru:pe:ru: 'identity (by village name and personal name)'

It is observed that both the types mentioned above, lengthening of word-final vowel takes place in the case of both the nouns in compound formation. However, there is one exception to this rule. Where second word-final syllable is -m, the lengthening of word-final vowel does not take place. In such cases only the first word-final vowel will be lengthened. For example:

musali 'old' mutaka 'very old'

musali:mutaka 'aged and very old'

da:ri 'way' tennu '?' (< old Tel. teruru 'way)

da:ri:tennu: 'way out'

kalla 'false' kapaṭam 'deceit'

but, kalla:kapaṭam 'false and deceit[ful]'

IV. Onomatopoeic reduplicative forms: Lengthening of the second word-final vowel is observed in the Coastal area. Rayalaseema dialect is more or less similar to Coastal dialect in this aspect.

'caka caka: 'quickly'

'paka paka: 'laughing' (sound)

(greater openness of final vowel is observed).

The same forms in Telangana have no vowel lengthening, but have gemination of the medial consonant, as in:

'cakka cakka and 'pakka pakka.

4.5.3

Sequence of Words in Compounds: Suggested Rules

Rule 1: Both words usually have an equal number of syllables including -lu. These combine in the following order:

a) The word with a greater number of open vowels will occupy the first place in the compound word.

b) If both the words have syllables with an equal number of open/close vowel qualities, syllable weight (cf. 3.2.8) is taken into account. In such cases the word with a lighter syllable structure will occupy the first position and the word with a greater number of heavy syllables will occupy second place in the compound.

Rule 2: In cases where the words have an unequal number of syllables, the word with fewer syllables will occupy the first place, and the word with more syllables will have second place, regardless of syllable weight.

Rule 3: A word that has short vowels has precedence over the word which has one or two long vowels. This rule is also applicable to large numbers of onamatopoeic forms.

Rule 4: This is a semantic rule for sequence of echo words. The meaningful word occupies the first place, and the second part is occupied by such other form which is partly meaningful in the compound. Sometimes these forms may be only bound forms, i.e., they occur only in compound forms, but never in isolation.

Examples:

ma:ʈa 'word, talk'

ma:ʈa:manti: 'talk and chat' *manti

peʈʈe 'trunk'

peʈʈæbɛɖa: 'trunk and other luggage' *bɛɖa

ʈʈæbanti and bɛɖa do not occur as independent forms.)

Some exceptions may be found to these rules. These exceptions, however, are not specific to any group of speakers. It is the personal (ideolectal) choice of the speaker that determines the sequence. For instance:

ku:ra 'vegetable' ka:ya 'unripe fruit'

ku:ra + ka:ya + lu ——> ku:ra ga:yalu or ka:ya gu:ralu 'vegetables'.

In theory both [ka:ya] and [ku:ra] are of equal syllable weight and [ka:ya] being an open vowel form should have precedence over [ku:ra] which has a close and an open vowel. Rule 1 states that open-vowel forms have precedence over others. Hence ka:yagu:ralu is the form found mostly in the Coastal dialect and in other educated speech of the entire region. The form ku:raga:yalu is also used, but with a slightly smaller distribution.

4.6.0

Rhythm Properties

Is there a difference between production and perception of rhythm? This question has been considered by Lehiste (1977) in her paper 'Isochrony reconsidered'. Lehiste's analysis of production durations indicate that a clear isochrony does not exist in speech production, but at the same time isochrony[12] is perceived, in spite of large differences in the stress intervals.

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12. 'Isochrony' is the inherent tendency of rhythm to produce approximately equal intervals of stress (in stress-timed rhythm) or of syllables (in syllable timed rhythm).

According to Dauer (1983), the manifestation of differences in the perception of rhythm in stress-timed and syllable-timed languages comes from three major structural areas. They are (1) syllable structure; (2) vowel reduction, and (3) stress. According to Puppel (1986:108), who considers syllable structure, the factors which bear on the different perceptions of rhythm are (i) variations in syllable length which is determined by the occurrence of long vs. short syllable nuclei (for example, English); (ii) variation in closed vs. open syllables which often contribute to the perceptual impression of greater or less regularity of syllable occurrence (for example, frequent repetitions of structurally similar open syllables in French); (iii) strong tendency for heavy syllables which are to be stressed and light syllables which are left unstressed (for example, English). Puppel observes that the phenomenon of centralisation of unstressed vowels is common in stress-timed languages. This maximises the difference between stressed and unstressed syllables. As opposed to this, in syllable-timed languages vowel reduction is not regular in unstressed position. Unstressed syllables may have shorter duration in syllable-timed languages, but are not completely reduced.

The observations of Puppel (1986) strengthen my argument about Coastal and Telangana dialects. Centralisation of unstressed vowels is common in stress-timed languages and vowel reduction is regular, thus developing internal Sandhi. In the Telangana dialect we observe this feature, whereas in the case of the Coastal dialect, which follows syllable-timed language properties, the unstressed syllables may have shorter duration, but are not completely lost.

Many textbooks and scholarly works attempt to distinguish stress-timed and syllable-timed languages, but nowhere is the distinction made really clear.

Lenneberg (1967) observes that rhythm belongs to central regulated mechanisms of motor co-ordination. That is to say, an individual employs this mechanism in order smoothly to execute a great number of co-ordination patterns, or combine and recombine movements. These regulatory mechanisms invole a co-ordinated interaction of a considerable number of muscles.

Rhythm possesses a temporal dimension. Lenneberg (1967:108) observes 'The essential nature of a time pattern is an underlying pulse or beat'. This underlying pulse provides the rhythmic framework. The nature of rhythm is marked by equidistant pulses which are also called oscillations. The sole function of rhythm is to maintain some kind of balance in the speech chain.

Rhythm is a manifestation of biological rhythm and it is an organising principle and timing device for articulation. When it functions as a timing device rhythm aids the ordering of articulatory complexities.

This leads us to believe that there is a '"preplanning" level which is responsible for the sequential arrangement of muscular events in speech as well as for a contingent anticipation of later muscular states' (Puppel 1986: 106). This preplanning level, Puppel assumes, leads to production. Thus the neural programme is manifestly responsible for the planning and production of rhythmic patterns. The rhythmic patterns can assume different surface forms.

By stress-timed rhythm is generally meant that stressed syllables occur at approximately regular intervals, regardless of whether they are separated by unstressed syllables or not. This type of rhythm theory explicitly states that the intervening time between one stressed syllable and the other would be approximately the same, irrespective of the number of intervening unstressed syllables. Syllable-timed rhythm theory states that all syllables,

whether stressed or unstressed, tend to occur at regular time intervals. Pike (1947) and Abercrombie (1967) propose similar definitions. Roach (1983:103) states that 'It has not been possible to show a real difference between stress-timed and syllable-timed languages' by the use of measuring techniques.

Abercrombie (1967) states thus:

> As far as is known, every language in the world is spoken with one kind of rhythm or with the other,...French, Telugu and Yoruba are syllable-timed languages...English, Russian and Arabic...are stress-timed languages. Many teachers of phonetics often face a question from students how to differentiate these. It is easy to construct and perform examples. It is difficult to set out clear rules as to assigning a language to one of the two categories.
>
> (ibid.:97)

From Abercrombie's later explanations on the same paper one may come to the conclusion that the distinction between stress-timed and syllable-timed languages may rest entirely on perceptual skills acquired through training.

Abercrombie claims certain rules. He observes that there is considerable variation in syllable length in a language spoken with stress-timed rhythm, whereas in a language spoken with a syllable-timed rhythm, the syllables tend to be equal in length.

4.6.1

Rhythm in Telugu Speech

Telugu is recognised by many phoneticians as a syllable-timed language. This brings out the fact that in the Telugu word all syllables, whether stressed or unstressed, tend to occur at regular time intervals. It is also agreed that the time between stressed syllables will vary depending upon the number of unstressed syllables.

In modern Telugu the word-initial syllable is stressed, and in normal speech this is easily perceptible. In disyllabic words

the second syllable is equally stressed when spoken in isolation. In connected speech it is not so. In connected speech the second syllable of a disyllabic word is unstressed if it is preceded by an open syllable. If the first syllable is a closed syllable, then the second syllable has a secondary stress. For example, 'kala - 'dream' : 'kal,la - 'false'. The second syllable of a trisyllabic word is always weak. The word-final syllable of a trisyllabic word may have secondary stress. The manifestation of secondary stress may be a long vowel.

In a compound word, when words of equal syllable weight are joined together, we find the word-final syllable in both the words bearing secondary stress in the form of a long vowel. This type of balancing is what comprises rhythm. In the case of compound word formation, a word with fewer syllables followed by a word with more syllables results in a rhythmic pattern. In such cases, the plural suffix -lu plays a significant role. In cases of words with an equal number of syllables and no secondary stress, the additional syllable -lu gives a slight edge over syllable numbers. In connected speech, a stressed syllable followed by one or two unstressed syllables and then another stressed syllable, contributes towards rhythm. The presence of junction prosodies like voicing of unvoiced sounds is considered as a feature of rhythm.

People who use reduced syllables or more close vowels are considered as arhythmic speakers.

This above account of rhythm will now be illustrated by some Telugu examples in which accentuation is marked in order to bring out the rhythmic qualities.

1. Word-initial syllable is stressed in polysyllabic words, and in disyllabic words the second syllable is unstressed if it contains a short V or C (see Rules 1 and 2, Section 3.2.2.0).

'padi 'ten'

'kala 'dream'

'a:ṭa 'play'

but, 'gaṭṭi 'hard, strong'

'kal,la 'false'

2. The second syllable of a trisyllabic word is always weak, and the final syllable of a trisyllabic word has secondary stress. The second syllable may thus be lost.

'pala,ka 'slate'

'kala,pa 'timber'

'naḍa,ka 'walk'

These examples in fast speech lose the second syllable and the following changes are observed, whereby new consonant clusters emerge in the language. (This is more pertinent to Telangana dialect, see 6.2.3.)

'pal,ka 'slate'

'kal,pa 'timber'

'naḍ,ka 'walk'

3. The manifestations of secondary stress in a trisyllabic form may be length of vowel. Examples are:

'kiṭi,ki > 'kiṭ,ki > 'kiṭ,ki' 'window'

'venaka > 'venka > 'venka' 'behind'

The word-final short vowels which are perceived as having increased length are not as long as long vowels; they are phonetically longer than short vowels, but are phonologically short vowels.

4. Word-final syllables of both the words of a compound form have secondary stress. This secondary stress is manifested as a long vowel.

'u:ru +'pe:ru ——> 'u:r,u:,pe:,ru: 'village (name) and personal name'
'village' 'name'

'a:lu +'cu:lu ——> 'a:l,u:,cu:,lu: 'wife and (her) pregnancy'
'wife' 'pregnancy'

A stressed syllable followed by a secondary stressed syllable, 'CV(C),CV, is the pattern of disyllabic words. This is one of the rhythmsin Telugu.

5. The number of syllables in each word also plays a key role. A word with fewer syllables followed by a word of more syllables in a compound word, contributes towards rhythm. The addition of the plural suffix -lu at the end of the second word increases the number of syllables in the second word where both the words would otherwise be of equal syllable weight, and hence aids the rhythm. In Section 4.5.2 I have illustrated that Telangana dialect has compound formation without -lu suffix. In fact Rules I and II of compound formation (ibid.) exhibit the difference between rhythmic and arythmic speech. Further examples are:

'atta +'ma:ma + lu ——> 'attama:malu
'mother-in-law' 'father-in-law' pl. 'parents-in-law'

'pe:da +'sa:da + lu ——> 'pe:dasa:dalu
'poor' 'common' pl. 'poor and common people'

6. A stressed syllable followed by unstressed syllables (one or more) or a secondary stress syllable and then again by a stressed syllable, is the pattern favoured by rhythmic speakers. Stress in the second word of a compound may be manifested as a junction prosody, like voicing:

'anna + 'tammudu + lu ——> 'anna,dammulu
'elder brother' 'younger brother' pl. 'brothers'

'ka:ya + 'ku:ra + lu ——> 'ka:ya,gu:ralu
'unripe fruit' 'vegetable' pl. 'vegetables'

Rhythmic differences in speech across dialects are noticed accurately by many speakers.

CHAPTER FIVE

VOWEL HARMONY IN TELUGU

5.1.0 Introduction

My main aim in this chapter is to consider vowel harmony in Telugu within a prosodic framework. I do not venture to step into controversial arguments on what is meant by vowel harmony, or to assess the suitability of one particular model or another. What I find relevant is to indicate briefly different types of vowel harmony and outline Aoki's (1968) typological framework, as background for my study. I consider the works of other scholars who have contributed towards our understanding of vowel harmony in Telugu and I demonstrate how they are inadequate in the context of regional and social dialects. I then present more complete and economical rules for Telugu vowel harmony.

Vowel harmony has been described as a phonological phenomenon and has been observed in languages of Eurasia and the African continent. It has been discussed by different scholars in different perspectives, viz., typological investigations, phonetic-acoustic studies, genetic and historical studies and varied theoretical models. Aoki (ibid.) has made an attempt to describe a typology of vowel harmony. Lightner (1965), Zimmer (1967) and Binnick (1980) have contributed towards generative interpretations. Clements (1977) considers vowel harmony under the auto-segmental model.

Vowel harmony is generally understood as a law which governs the co-occurrence of vowels within a span of utterance, nearly always, the word.[1]

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1 It may be noted that sentence level vowel harmony is reported for the Somali language by Hall et al (1974).

Vowels are classified into separate harmonic sets. It is observed that when a vowel harmony law operates, the vowels of a word must belong to the same harmonic set. The selection or choice of the set depends on a particular morpheme in the word. Vago (1980) observes that the morpheme which determines the harmonic quality of the vowels within the harmonic span may be identified as the controlling morpheme and the other morphemes within the word exhibiting harmonic alternations may be known as controlled morphemes. This observation of Vago (1980: xi) leads to the understanding that vowels of controlled morphemes agree with the vowels of controlling morphemes as far as harmonic class is concerned. Thus, if a controlling morpheme belongs to the harmonic class 'rounded vowels', then a controlled morpheme has a variant with vowels chosen from the harmonic class of rounded vowels; if the vowels of a controlling morpheme belong to the harmonic class 'spread vowels' then a controlled morpheme has a variant with vowels chosen from the same class of spread vowels.

Sometimes an exceptional situation may exist to the above mentioned general pattern. Controlling morphemes may be disharmonic, and as a result, may not cause any assimilation in the controlled morphemes. Furthermore, there are some cases where the controlled morphemes may be non-alternating and as a result they have invariant shapes which may not fall in line with the controlling morpheme in the word. A third type of exception would be the case of some morphemes which may contain vowels which may be called neutral. These neutral vowels co-occur with vowels of all harmonic sets, and thus have an interesting place in the description of vowel harmony. (For details see L. Anderson, S. Anderson, Campbell, Ringen and Vago in Vago: 1980)

5.1.1

Types of Vowel Harmony

Three types of vowel harmony have been observed in languages: palatal harmony, labial harmony and tongue root harmony. In palatal and labial harmony systems, harmony is induced by the root morpheme, i.e. roots are controlling morphemes and affixes are controlled morphemes. As a result, in these languages, the affixes may have allomorphic variants. Vago (1980) points out that these affixes are specifically suffixes, since Uralic and Altaic languages (where palatal and labial harmony takes place) generally lack prefixes and infixes. Tongue root harmony has variously been described as tenseness harmony, horizontal harmony, relative height harmony and cross height harmony. Pike (1967) discussed tongue root position in practical phonetics in detail. Pike's theoretical approach was based on Stewart's analysis of tongue root position in Akan vowel harmony (Stewart: 1967). Tongue root harmony systems are found to be more common in African languages. Some of the languages which have tongue root harmony have the root-controlling system as found in palatal and labial harmony systems. Languages like Igbo and Akan can be cited as examples for this. Other languages with tongue root harmony have the so called dominant/recessive type. In this group the root/affix distinction is not relevant. Morphemes are characterised as dominant or recessive depending on the harmonic quality of their vowels. Recessive morphemes assimilate to dominant morphemes. This situation is found in languages like Diola-Fogny and Kalenjin (reported by Vago, 1980, xiii).

5.1.2

Typological Framework (Aoki)

Aoki (1968) examines the possibility of arriving at a relative framework which aims at a typological classification of vowel harmony. Aoki's work

is considered here for the purpose of explaining Rama Rao's (1976) analysis of Telugu vowel harmony.

Aoki chooses distinctive features as a basis. These are features that are in harmony or identically specified within certain boundaries. He then distinguishes the features under two classes, viz., total harmony and partial harmony. Total harmony, according to Aoki, is a situation in which vowels of the morphemes are not specified in the lexicon except as plus vocalic and minus consonantal. Partial harmony is described differently. Certain vowels are partly specified, and the unspecified features are provided by phonological rules. Aoki classifies partial harmony further into three divisions, viz., palatal, horizontal and labial harmonies. Palatal harmony, according to him, is the one which involves the feature palatalisation. Horizontal harmony involves harmonisation in height, tenseness, or position of the tongue root. (Aoki states that the term horizontal harmony was first coined by Roman Jakobson in connection with Paleo Siberian languages - A A 44.61o: 1942). Labial harmony is the feature of rounding and its assimilation. This type of harmony is found in Turkish and Igbo. It is noted by Aoki that labial harmony frequently occurs secondarily with another type of harmony.

After examining distinctive features, Aoki considers the parameter of symmetry. A symmetric harmony system is one where a vowel in a certain position can determine the series of the vowels for the word, as in Finnish, Twi and Igbo. An asymmetric system is a system in which the dominant vowel changes the non-dominant vowels, as in the Koryak language.

The third criterion suggested by Aoki is 'alternating systems'. Depending on the number of features left unspecified, the number of alternating forms differs. For example, in a language with only palatal harmony two alternating forms may be observed, and in a language with two kinds of harmony,

four alternating forms may be found. Non-alternating systems are those where a certain constraint on the occurrence of vowels is observable. The 'internal harmony' of Turkish is mentioned by Aoki as an example for this phenomenon.

Aoki also mentions neutral vowels (cf. 5.1.0) as a basis for vowel harmony classification. He however rejects the argument for neutral vowels under the plea that the neutral vowels are the products of a low level phonological rule.

Aoki mentions another criterion for the classification of vowel harmony. Directionality - which can be phonologically stated as progressive or regressive, and syntactically stated as stem-determined or root-determined. In languages which do not have prefixes, harmony is always stem-determined or progressive. Zimmer (1967) drew attention to the point much earlier. If the harmonic system is symmetric, either of the series may dictate harmony, thus making the harmonisation predictable. In an asymmetric system, a dominant vowel, irrespective of its position of occurrence, dictates the harmony.

5.1.3

Vowel Harmony in Telugu

The term 'vowel harmony' was noticed in the Indian context and used for the first time by Sumiti Kumar Chatterjee in his Bengali Self Taught. He states that "vowel harmony characterises the Chalit-Bhāsā and forms showing the results of vowel harmony frequently occur in Sādhu Bhāsā. It means the alteration of a vowel through the influence of preceding or following vowel" (ibid., 1927: 112). It is clear that he aims at describing phonetic harmony.

Gidugu Ramamurti (1936)[2] observed certain phonetic features in Telugu.

2 The findings of Ramamurti (1936) are quoted in Rama Rao, c. (c. 1978) in a Telugu article published locally. Original works are not available to me.

He was the first to state that vowels in Telugu words have a tendency to lower in the environment of a low vowel in a following syllable. This, of course, is a phonetic harmony relevant to monomorphemic forms, so Ramamurti and his son Sitapati are to be credited with being the first to observe the process of phonetic vowel harmony in Telugu. Instrumental evidence was not available to them and structuralist theories were not developed at the time. These are the only reasons for their limited contribution.

A brief survey of accounts of vowel harmony in Telugu made to date is given in the following sections.

Telugu scholars and linguists noted the feature of vowel harmony, but called it vocalic Sandhi rather than vowel harmony. This resulted in the grouping of vowel harmony with consonantal Sandhi.

5.1.4

Vowel Harmony as noted by Krishnamurti (1957)

Krishnamurti, in one of his papers on Sandhi in modern colloquial Telugu (1957), touches on the phenomenon of vowel harmony but leaves it without further exploration. He deals with vowel harmony without mentioning it by name. He notes that "two more types of alternation which are non-automatic, also take place in vocalic Sandhi" (1957: 187). He states that in a sequence of more than two syllables in close juncture, the vowel of the second syllable is assimilated in quality to that of the following syllable. The alternations are given by him, as follows:

uCi/e .. iCi e.g. kalis-i having met

(kalus - to meet, -i past morpheme)

(kalisē adj. meeting (-ē non-tense adj. suffix)

uCa .. aCa kalaw-a in order to meet

(kaluw - to meet, allomorph of kalus-)

He observes that this type of alternation operates without exception throughout the verb class, but notes some exceptions in the noun class, and cites the following example :

mogudu	'husband'
mogudimi:da	'on the husband'
-i-	oblique morpheme, mi:da 'on'
	not mogidi ...

He cites the exception without offering any explanation. I suggest reasons for such exceptions in the later parts of this Chapter (see 5.3.1.5).

Krishnamurti states that final /i/ of a noun class alternates[3] with /u/ before the plural morpheme -lu in modern colloquial Telugu.

e.g.[4] gadi + lu ⟶ gadulu 'rooms'

katti + lu ⟶ kattulu 'knives'

From Krishnamurti's data given above, it is clear that he recognises i, e, u and a are harmony inducing vowels. He describes two types of alternation - the first dealing with vowels in close juncture and the second dealing with suffixes across morphemes, as in the examples above. Though he has not chosen to label the second alternation as vowel harmony, it is clear that this is what he is describing. His first type of alternation is discussed in detail by me under Sandhi (cf. Sandhi 6.1.1). Krishnamurti's examples show that vowel harmony in Telugu is induced by the suffixes, unlike the cases of palatal or labial harmony systems or tongue root harmony considered earlier (see 5.1.1).

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3 Instead of using the phonetic term 'harmony' he prefers to use the term 'alternates'. Probably he is more conscious of allomorphic shapes than of harmony.

4 As a point of interest, I have recorded forms without any such alternation, as gadilu and kattilu in the Telangana dialect of Telugu.

5.1.4.1

Comments

Krishnamurti considers vowel harmony phonologically but treats it as a phenomenon in Sandhi. The rules proposed by him are not sufficient to take care of all the types of vowel harmony in Telugu. Krishnamurti recognises only selected nominal suffixes like -lu, the plural suffix, and some others. However, there are a number of nominal and verbal suffixes in Telugu which induce harmony but he has not dealt with any of them.

A case that puzzled Krishnamurti is illustrated below. Krishnamurti could see no reason why harmony does not take place in the example

mogudu 'husband' when used with obl. suffix -i- as shown below:

mogudu+i ⟶ mogudi 'of the husband'
N obl. suf

with the addition of mi:da a post-position meaning 'on'

mogudu+i + mi:da ⟶ mogudimi:da but not *mogidimi:da

A possible explanation for why the form *mogidimi:da is not possible in the language is as follows:

-du is an agentive suffix. All the Sanskrit nouns with human referents, borrowed into Telugu add this nominative suffix; Telugu native words have the -wa:du suffix. For example:

Sanskrit base:	de:wudu	'God' +	i	de:wudi	'of God'
	narudu	'man' +	i	narudi	'of man'
Telugu base:	paniwa:du	'worker' +	i	paniwa:di	'of the worker'
	pillawa:du	'child' +	i	pillawa:di	'of a child'

The oblique suffix -i does not induce any harmony. i occurs as the genitive oblique case marker only when the noun ends in [u]. In other cases it has a Ø allomorph. For example:

wa:ɖu + i ⟶ wa:ɖi 'his' as in wa:ɖi pani 'his work'
'he'

a:me + i ⟶ a:me 'her' as in a:me ci:re 'her saree'
'she'

pilla + i ⟶ pilla 'child's' as in pilla cokka: 'child's shirt'
'child'

abba:yi + i ⟶ abba:yi 'boy's' as in abba:yi pustaka. 'boy's book'
'boy'

These examples show that when noun is of the animate class and with an agentive suffix -ɖu, the oblique suffix takes the place of -u in -ɖu. In other cases it is unmarked.

There is a general rule in Telugu Phonology, that the first vowel in a sequence of two vowels at morpheme junction, is dropped. Thus

mogudu + i ⟶ mogudi —— mogudi 'of the husband'

The grammatical explanation is necessary because i does not induce harmony in forms like

ku:turu + i ⟶ ku:turi 'of the daughter'
'daughter'

cellelu + i ⟶ celleli 'of the younger sister'
'younger sister'

Prakasam observes (cf. 5.1.7) that harmony cannot go across a retroflex consonant which Rama Rao rejects and attributes to presence of coronal articulation (cf. 5.1.10). The example mogudi provides evidence of this. Prakasam's argument looks as if it is tenable because [ɖ] is a retroflex consonant. But my examples above which show non-harmony forms without retroflexes prove that it is not the retroflex consonant that prevents harmony as argued by Prakasam, but the coronal consonant quality that prevents harmony as observed by Rama Rao. Added to this, my own observation of the grammatical feature is also relevant, for I have not come across instances with harmony, even with other consonants before i suffix. Nominal suffix i has no role to play as far as harmony is concerned. However, the verbal

suffix i does have a role to play in harmony. This is a new finding not previously noted (cf. 5.3.1).

5.1.5

Phonetic Harmony Described by Kelley (1959)

Kelley (1959) proposes a law of lowering and centralisation of high front and high back vowels in the environment of the low central vowel [a]. Kelley does not appear to be aware of Gidugu Ramamurti's work (Ramamurti, 1936), but there is similarity in their views with regard to the vowel lowering principle. Kelley's work is relevant at this point in the thesis as far as it is concerned with 'harmony'. Full discussion is given later in the Chapter on Sandhi (cf. 6.1.3). While agreeing with the vocalic Sandhi rules proposed by Krishnamurti (1957), Kelley introduces the concept of 'co-vowel'.

A co-vowel, according to Kelley, has its domain extending over more than a syllable. Phonetic features like lowering, centralising, heightening and length are treated by Kelley as co-vowels and he gives examples for each feature. He gives a long list of examples (Kelley, 1959: 146-158) from which I have selected those which are relevant for my discussion. He does not give the isolate forms but I provide them for the convenience of readers who may not know Telugu.

Co-vowel lowering

mIś + UndI #	'there is a pretext'	misa + undi
nE ll ʊ #	'months'	nela + lu
tɔɭlʊ #	'thighs'	toḍa + lu

Co-vowel heightening

piḍ + undi #	'there is a handle'	piḍi + undi
guṇḍ + undi #	'there is an iron ball'	guṇḍu + undi
kampa:.?	'is it a stink?'	kampu + a:

Co-vowel length

pI:ʈlʊ #	'stools'	pi:ʈa + lu
gʊ:ɖa: #	'is it a basket?'	gu:ɖa + a:
mE:k + undI #	'there is a goat'	mɛ :ka + undi

Co-vowel central

gʊɳɖ +ʊndI #	'there is powder'	gʊɳɖa + undi
gʊɳɖa:.?	'is it powder?'	guɳɖ + a:
kamp + undi	'there is a stink'	kampa + undi

Kelley's analysis is applicable to word phonology and he claims that each vowel phoneme has different allophones depending on whether it is in disyllabic, trisyllabic or polysyllabic words or at word junctions. Some harmony occurs in Sandhi. Each vowel in Sandhi across word boundary has either a lower or higher variant depending on the environment. In the first instance, he classifies Telugu vowels under two heads, as word final vowels and non-final vowels. Later he uses the articulatory features of 'lower', 'higher' and 'centralised'. In another paper Kelley (1963) describes the allophonic variants of phonemes in different contexts including vocalic Sandhi and gives morphophonemic alternants across word boundaries (see 6.1.3).

5.1.6

Harmony as Observed by Subba Rao (1971)

Subba Rao (1971) cites two types of harmony - a suffixal harmony and a vowel lowering phenomenon. Suffixal harmony, according to him, is a process in which the second vowel of a disyllabic stem harmonizes with suffixal vowels, or the second stem vowel and the suffixal vowel both harmonize with another vowel in the next suffix under specific conditions. He describes vowel lowering as a process in which any vowel which is followed by the open vowel [a] in the next syllable, is lowered. He does not consider lowering with any

vowels other than [a]. His analysis of suffix harmony is considered below and it is to be noted that he restrict himself to verb roots and verbal suffixes and exclude noun forms and case suffixes from his purview.

The type of vowel harmony in Telugu is something outside the purview of general harmonic systems as mentioned in 5.1.2. Subba Rao's arguments also lead us to that conclusion. Only a type where suffixes induce harmony is found in Telugu verbs.

Subba Rao proposes a rule that suffixal vowel harmony takes place only in disyllabic stems of the type (C)VCVC(C) The second syllable of a disyllabic stem harmonizes with the verbal suffix and not vice versa. Rao points out that this type of harmony is different from that obtaining in classical Mongolian where the vowels of the suffix harmonize with the stem. He draws our attention to the fact that u is the second stem vowel in the majority of Telugu disyllabic verb stems. He takes the stem kudurc 'to arrange' as an example to illustrate vowel harmony and illustrates harmony as follows:

kudurc + u ⟶ kudurcu
'to arrange' 'imp. suffix' 'arrange!'

kudurc + i ⟶ kudirci
'to arrange' 'past participle suffix' 'having arranged'

kudurc + aka ⟶ kudarcaka
'to arrange' 'neg. suffix' '(neg. imp.) don't arrange!'

He also cites another set of examples with caduw 'to study' as the verb stem.

caduw + u ⟶ caduwu
'imp. suffix' 'read!'

caduw + i ⟶ cadiwi
'past participle suffix' 'having read'

caduw + aka ⟶ cadawaka
'neg. suffix' 'don't read!'

In the above forms the vowel of the initial syllable of the stem remains

unchanged. The suffixal vowel is [u] or [i] or [a].[5] The suffix initial vowel changes the second stem vowel, i.e. the suffixal vowel induces harmony. Subba Rao then cites monosyllabic forms as examples to show that it is only the suffix which induces harmony and not vice versa. (The counter argument may be that the second stem vowel induces harmony and the suffixal vowel changes accordingly.) He gives tin 'to eat' and ye:r 'to pick' as examples.

tin + u	⟶	tinu	'eat!' (imperative)
tin + i	⟶	tini	'having eaten'
tin + aka	⟶	tinaka	'don't eat!'
ye:r + u	⟶	ye:ru	'pick!' (imperative)
ye:r + i	⟶	ye:ri	'having picked'
ye:r + aka	⟶	ye:raka	'don't pick!'

From the above set of examples it is clear that imperative, past participle and negative imperative suffixes are u, i and aka respectively. Having demonstrated that u, i and aka are the forms of the suffixes, he goes back to kudurc and caduw to emphasise that it is the suffixal form which induces harmony.

Subba Rao's description of vowel harmony is expressed in terms of generative phonology. Accordingly he takes up the issue of how to represent the second vowel in the underlying structure of disyllabic stems like kudurc and caduw. The three alternatives that he considers are:

(i) to postulate no underlying vowel - thus leaving it to a vowel copy rule;

(ii) to leave the vowel unspecified and finally,

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5 In both the cases of kudurc and caduw I prefer to take the verb root as -u ending: kudurcu and caduwu. They are incidentally identical with imperative forms. Such treatment makes it possible to solve other problems and is more in keeping with the phonological system of Telugu in that all other morphemes are vowel ending (see 5.1.7.1 and 5.3.2).

(iii) to select one of the three vowels /i/ or /u/ or /a/ as the underlying vowel. He then discusses at length this self-posed problem and rejects the first choice on the ground that it would then result in difficulties for distinguishing between monosyllabic and disyllabic stems. The second alternative is rejected because of the universal marking conventions which apply to an unspecified vowel and make it /a/ and there are verbs in Telugu with /a/ as the second stem vowel which do not participate in the vowel harmony process. Subba Rao illustrates this with the example cemarc 'to become wet'.

cemarc + u	⟶	cemarcu	'become wet!'
cemarc + i	⟶	cemarci	'having become wet'
cemarc + aka	⟶	cemarcaka	'don't become wet!'

He considers that in the event of postulating /a/ in the second syllable as the underlying vowel, verb stems in Telugu would have to be classified as of two different types, viz. (i) stems with /a/ in second syllable which undergo vowel harmony[6] and (ii) stems with /a/ in second syllable which do not undergo vowel harmony. Because of this further problem, he rejects /a/ as an underlying vowel. He also rejects /i/ for similar reasons. There are some verbs with /i/ as the second stem vowel which do not participate in the process of vowel harmony. He illustrates this with wardhill, 'to prosper' as an example.

wardhill + u	⟶	wardhillu	'prosper!'
wardhill + i	⟶	wardhilli	'having prospered'
wardhill + a:li (obligatory suffix)	⟶	wardhilla:li (obligatory)	'one should prosper'

Rao observes that if /i/ is chosen as the underlying vowel of the second

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6 He however does not give any examples of stems with /a/ in second syllable position which undergo harmony.

syllable in stems like kudurc and caduw on the basis of forms like kudirci and cadiwi, then one can account for the harmony rule which produces

kudirc + i ⟶ kudirci

kudirc + u ⟶ kudircu

cadiw + i ⟶ cadiwi

cadiw + u ⟶ caduwu

but it does not apply to wardhill, for

wardhill + u ⟶ wardhillu

not *wardhullu

The form *wardhullu does not occur in any form of Telugu speech. Subba Rao finally decides that there is no reason for preferring /a/ to /i/ or vice versa as an underlying vowel. He decides to set up /u/ as the underlying vowel and gives the following reasons:

(i) that by doing so, there are no exceptions to the vowel harmony rule and

(ii) stems of the type cemarc and wardhill which appear to be exceptions when /a/ or /i/ are chosen as second stem vowels can be accounted for naturally.

Having established /u/ as the second stem vowel in disyllabic forms Subba Rao illustrates how the vowel harmony rule applies.

(1) kudurc + u ⟶ kudurcu 'arrange (familiar imp.)'

(2) kudurc + i ⟶ kudirci 'having arranged'

(3) kudurc + aka ⟶ kudarcaka 'don't arrange'

(4) kudurc + ee-nu ⟶ kudirceenu 'I arranged'

(5) kudurc + a-w-ooy ⟶ kudarcawooy 'arrange'
(familiar imperative with vocative suffix)

In item (1) above, u is the imperative suffix added to the stem. This harmonizes with the stem vowel. So there is no change. In (2) the suffix i is added to make a past participle form which induces harmony and changes the second stem vowel to /i/. In (3) -aka suffix denotes the negative

imperative and this causes a change in the second stem vowel to /a/. In (4) the stem is followed by ee which is a past tense suffix and -nu, the first person singular marker. /ee/, being a front vowel, induces harmony and changes stem vowel /u/ to /i/.

Subba Rao then proposes a more general rule where /u/>/i/ when followed by any front vowel, i.e. /i/ or /ee/ with an intervening morpheme boundary and /u/ > /a/ when followed by non-high front or back vowel with intervening morpheme boundary.

> /i/ and /ee/ change /u/ to /i/, i.e., the back high vowel is fronted and becomes /i/ when followed by /i/ or /ee/ whereas the back high vowel is lowered to become /a/ when followed by /a/ or /oo/. To put it more specifically, /ee/ and /oo/ which are of the same height in the vowel triangle, induce different types of harmony, viz., /ee/ causes /u/ to change to /i/ and /oo/ causes /u/ to change to /a/. If /i/ and /ee/ change /u/ to /i/ normally one would, on the basis of naturalness and simplicity criteria, expect /u/ and /oo/ to keep /u/ unchanged; but only /u/ does. (Ibid., P 546).

So he rejects this rule. He then attempts another solution, to see whether /ee/ can be treated as /i/ and /oo/ as /a/ in the underlying representation. He recognises /ee/ as the past tense suffix and hence there is no motivation to consider it as /i/. He then considers the question of suffix ooy, namely whether it is ooy in the underlying representation or if it has some other suffix preceding it. He considers some examples at length and posits an additional suffix /a/ in the underlying structure.

(6) kudArc-a-w-ee 'arrange!' (familiar imperative with vocative suffix)

(7) kudArc-a-w-oo 'arrange!' (familiar imperative with vocative suffix)

(8) kudArc-oddu 'don't arrange!'

The underlying representations for 6,7 and 8 are as follows:

(9) kudurc-u-a-w-ee 'arrange!' (imperative suffix with vocative suffix)

(10) kudurc-u-a-w-oo 'arrange!' (imperative suffix with vocative suffix)

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* A for Subba Rao is lowered v in underlying representation.

(11) kudurc + a + oddu 'arrange' + a + 'negative imperative'

The -a- posited in the above cases does not result from vowel harmony in the underlying representations. This can be substantiated by considering monosyllabic stems[7] where vowel harmony does not take place. Subba Rao illustrates this with the stem tin:

(12) tin-u 'eat' (familiar imperative)

(13) tin-a-w-ee 'eat' (familiar imperative with vocative suffix)

(14) tin-a-w-oo 'eat' (familiar imperative with vocative suffix)

(15) tin-a-oddu 'don't eat'

After positing -a- in underlying structure Subba Rao derives the forms as shown below:

Underlying representation	kudurc+u+a+w+ee	kudurc+u+a+w+oo	kudurc+a+oddu
V Harmony	kudarc+a+a+w+ee	kudarc+a+a+w+oo	kudarc+a+oddu
V lowering	kUdArc+A+a+w+ee	kUdArc+A+a+w+oo	kUdArc+a+oddu
V deletion	kUdArc+a+w+ee	kUdArc+a+w+oo	kUdArc+oddu
Surface form	kUdArcawee	kUdArcawoo	kUdArcoddu

Subba Rao thus establishes that the vowels that induce harmony are /i/ /ee/ and /a/, and that /oo/ does not induce any vowel harmony. Further, he clearly states that the second stem vowel remains unchanged when followed by suffixal /u/. He also emphasizes that the first stem vowel of the disyllabic

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7 In items 13, 14 and 15 Subba Rao shows the vowel lowering phenomenon. For him the forms are tIn- before any suffix other than the high vowel -u. This he claims as further evidence for the presence of -a- in underlying structure.

stem does not participate in the process of vowel harmony, that is to say, it remains unchanged. In fact, there is a reason for this (see 5.2.2).

Subba Rao investigates forms with future ta: and conditional te: suffixes.

(16) caduw-u-ta:-nu 'I will study'

(17) caduw-u-te: 'If I study'

ta: in (16) is the tense-mode suffix and nu is the personal suffix. te: is the conditional suffix in (17). The underlying representations for these are as follows:

(18) caduw-ta:nu

(19) caduw-te:

Vowel harmony does not apply in (18), (19) because the stem caduw- is immediately followed by a suffix consonant and not a vowel.[8] The forms in (18) and (19) are derived from (16) and (17) after application of an independently motivated vowel epenthesis rule discussed elsewhere.

Subba Rao states that it is possible for both a suffixal vowel and a stem vowel to be harmonized by a following suffixal vowel and illustrates with an example:

(20) cAdAwA-m-an-anu '(you) tell (someone) to read'

The underlying representation for this is:

(21) caduw + u + ani + an + u
'read' 'imp.' 'that' 'tell' 'imp.'

In (21) the initial imperative suffix after the stem does not induce any harmony, but the /a/ of ani harmonizes the imperative suffix as well as the stem vowel, resulting in cadawa. The intermediate stage of the form is,

(22) cadawa + ani + an + u

---

8 This is not applicable to Modern Standard spoken Telugu. My data has caduwu as the stem which undergoes harmony in conditional forms (see 5.3.2.2).

Rao explains the presence of m between complement sentence and complementizer ani in indirect speech as an insertion phenomenon. cAdAwAmananu results in this way. Subba Rao mentions another case in Telugu where two segments simultaneously harmonize with the suffixal vowel and here it is /ee/ that induces vocal harmony. An example is

(23) cadiw-ee 'read' (imperative emphatic)

ee for him is an emphatic marker and the underlying representation for (23) is as follows:

(24) caduw+u+ee

ee induces vowel harmony thus changing two /u/s to /i/ and then vowel deletion drops the second /i/ yielding the form cadiwee.

Subba Rao, as a last but crucial case in vowel harmony, discusses the limited class of 'psych' verbs which are disyllabic with /u/ as the second stem vowel. These forms do not participate fully in the process of vowel harmony. telus 'to have the knowledge' or 'to know' is given as an example of a disyllabic stem of this type.

(25) telus + i ⟶ telisi 'having known'

It undergoes vowel harmony in this case, but consider the following:

(26) telusun-an-anu 'tell (him) that (you) know'

This form can be segmented into morphemes as shown in (27)

(27) telusu-ani-anu

As telus is a disyllabic stem for Subba Rao, one would expect the vowel harmony process to take place. According to rules the form should be *telas-an-anu, but it is not so. Subba Rao also cites some more instances of disyllabic stems where vowel harmony does not take place. This probably is the reason for him to note that this class of verbs does not fully participate in vowel harmony.

(28) caduw-Udunu-eemoo 'maybe, (I) would have read'

(29) cadUw-unu-eemoo 'maybe (he) would have read'

He attributes lack of harmony to the presence of non-stem consonants [n] and [d]. The cases (27), (28) and (29) above he treats as exceptions to the vocal harmony rule.

5.1.6.1

Comments

In his account of vowel lowering harmony, Subba Rao (1971) does not pay attention to lowering with any vowels other than /a/. But for some passing remarks, he leaves further discussion of the vowel lowering phenomenon out of the scope of his paper and restricts himself to verb roots and verbal suffixes, leaving noun forms and case suffixes outside his purview. The account of vowel harmony is thus incomplete in his analysis.

Subba Rao's choice of kudurc and caduw as stems seems to me to make for a needlessly complex analysis. I prefer to take the base forms as kudurcu and caduwu (which incidentally have the same form as the imperative) as I find a better analysis is then possible (cf. 5.3.2).

Subba Rao's self-imposed problem of selecting one of the three vowels /i/, /u/ or /a/ as an underlying form is too laborious. His examples cemarc and wardhill do not hold good for similar reasons as those expressed by Rama Rao (cf. footnote 22).

Unlike Krishnamurti (1957) who proposed that /e:/, his e:, induces harmony, Subba Rao proposes that /x/, for which he uses the symbol ee, induces harmony. Krishnamurti does not mention /x/ and Subba Rao never talks of /e:/. Subba Rao specifically states that oo does not induce any harmony. o and e are not mentioned. These questions are dealt with by me in Section 5.3.2 of this Chapter.

Although Subba Rao emphasises that the first stem vowel of disyllabic stems does not participate in the process of vowel harmony, he does not appear to be aware why this should be so. I suggest a reason for this later in my

analysis (cf. 5.2.2).

There is some inconsistency in Subba Rao's treatment of -u-; he sometimes treats it as part of the verb stem and at other times as a separate suffix. When investigating the forms with future and conditional suffixes which induce vowel harmony in Telugu, Subba Rao considers -u- as part of the verb stem, but makes a morpheme division between caduw and u, i.e. caduw-u-taa-nu 'I will study'. For him, in caduwuta:nu the stem is caduw. Surely the morpheme division should not be at the place given by him (ibid., p. 548, Ex 41). In caduw-u-te: he treats the stem as caduwu (ibid., p. 548, Ex 42). But in the imperative form -u- is treated as the imperative suffix as in

caduw + u + ani + an + u
'read' 'imperative suffix' + 'that' + 'tell' + 'imperative suffix'

(ibid., p. 548, Ex 46).

5.1.7

Harmony As Treated by Prakasam (1972)

Prakasam (1972) deals with Sandhi and harmony in his thesis entitled 'A systemic description of certain aspects of Telugu phonology'. For him

> Sandhi also includes what is usually called vowel harmony. Sandhi is a phenomenon of change, where as harmony is one of specification, vowel harmony is phonetically motivated and phonologically it is considered as N-Prosodic harmony.
>
> (Prakasam, 1972: 170)

Prakasam observes that harmony operates only at one rank - the foot, whereas Sandhi operates at the ranks of cluster, foot, phrase and tone group but mainly foot. Since his 'Sutras' (or rules) deal with both Sandhi and harmony, I prefer to discuss only the rules relevant to harmony here, that is Sutras 2, 3, 4 and 11, and to postpone the discussion of Sandhi rules until later. In Sutra 2 Prakasam deals with Telugu verb forms. I reproduce the Sutra 2 here.

Sutra-2 (N-Prosodic acquisition): when the verbal prefinal and final syllables are followed by verbal suffixes, the harmonic syllables of the radical acquire the same N-Prosody as that of the following suffixal syllable.

He gives the following examples:[9]

(1) a:ɖə + u ⟶ a:ɖu 'Play!'

(2) a:ɖə + a ⟶ a:ɖa 'I don't play!'

(3) a:ɖə + te: ⟶ a:ɖite: 'if played'

(4) a:ɖə + tu: ⟶ a:ɖutu: 'while playing'

His Sutra 3 is given below:

Sutra-3 (N-Prosodic specification or selection): This rule is applicable to Harmonic suffixes which are monosyllabic, are specified for their N-Prosody on the basis of the preceding syllable. The suffix selects 'y' prosody if the preceding N-Prosody is 'y' cooccurring with high vowel 'I', but 'W' Prosody in all other contexts.

He illustrates his rule[10] with the following examples:

$\frac{V \quad Y/w}{k}$[11]

(5) pilli + kə ⟶ pilliki[12]

(6) gorre + kə ⟶ gorreku

(7) a:ku + kə ⟶ a:kku

(8) anna + kə ⟶ annaku

$\frac{n \quad Y/w}{T}$

(9) katti + nə ⟶ kattini

(10) vadine + nə ⟶ vadinenu

(11) anna + nə ⟶ annanu

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9 Translations are not given by Prakasam, but they are provided here to help the non-Telugu reader.

10 Deals with Sandhi and is considered elsewhere by me (see Sandhi 6.1.5).

11 Prakasam marks V as long, $\bar{V}$, but only example No. 7 has long V. All others are short and I am sure the initial syllable has nothing to do with Sandhi phenomena.

12 The Sutra that is applicable is indicated by a subscript numeral as follows: S_2, S_3, etc.

$\frac{Y/w}{q}$ (12) donga + Və ⟶ dongavu

(13) piriki + Və ⟶ pirikivi

(14) gorre + Və ⟶ gorrevu

Prakasam observes that this process operates even when the suffixes are added to loan words, or even when the final syllable is long. He provides some examples:

(15) jenḍa: + nə ⟶ jenḍa:nu

(16) kiṭiki: + nə ⟶ kiṭiki:ni

(17) vinḍo: + nə ⟶ vinḍo:nu

In his thesis Prakasam describes vowel harmony as processes of 'acquisition' or 'choice' of certain N-centering syllable prosodies by a harmonic syllable (Cə). Thus harmony for him is a phenomenon of specification. Therefore, apart from these two Sutras, he has nothing further to say on harmony. But in general terms, what he considers as part of Sandhi, offers some data for vowel harmony.

In Sutra 4 he discusses the N-Prosodic harmonization in noun stems. When the plural cluster[13] is suffixed to a nominal with $\frac{Y}{(C)\ I}$, the 'Y' Prosody is replaced by 'w' to harmonize with 'w' prosody of the plural suffix. For example:

(18) ka:ki + lu ⟶ ka:kulu

(19) ko:ti + lu ⟶ ko:tulu

(20) mu:ti + lu ⟶ mu:tulu

This type of harmonization applies to all the prefinal syllables also in trisyllabic nominal stems and tetrasyllabic nominal stems.

(21) kolimi + lu ⟶ kolumulu

(22) enimidi + lu ⟶ enumudulu

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13 'Cluster' for Prakasam is a morph, or meaningful element.

Prakasam describes at length the constraints in the application of Sutra 4 in the following cases:

(23) ka:viḍi + lu $\xrightarrow{S_4}$ ka:viḍulu $\xrightarrow[S_{13},\ S_{14}]{S_2}$ ka:viḷḷu

(24) aviṭi + lu $\xrightarrow{S_4}$ aviṭulu $\xrightarrow[S_{13}]{S_2}$ aviṭṭu

These constraints, Prakasam believes, may be due to the following two reasons: (a) a prosodic harmony demands a positive v-harmony, i.e. the presence of same v-unit in both the syllables or (b) prosodic harmony cannot cross a c-cluster[14] which is the result of some other rule.

In Sutra 11 Prakasam proposes a 'bilabial nasal' (m) insertion rule, which Subba Rao proposed earlier but for which he gave no explanation (see 5.1.6).

Prakasam's Sutra 11: A 'bilabial nasal' (m) is inserted between a reported singular imperative verb and the reporting verb anu.

Prakasam traces the [m] historically to the second person singular mu in old Telugu which synchronically no longer exists in direct speech. Prakasam states that this 'm' does not have the same phonetic exponents as a pre-Sandhi 'm' does between two v-units in a foot (m: loosely closed bilabial nasal). So he decides to treat it as an inserted 'm' rather than an underlying 'm'. He compares the inserted 'm' (ex. 26) with non inserted 'm', (ex. 25):[15]

(25) pa:ḍamu + anna:ḍu ⟶ pa:ḍamanna:ḍu 'we won't sing', he said

(26) pa:ḍa~~m~~ anna:ḍu ⟶ pa:ḍamanna:ḍu '(he) told (x) to sing'

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14 Prakasam, in his systemic approach, avoids using the terms like 'stem'. He uses the nomenclature of 'radical' but for convenience I have adopted the term 'stem' here.

15 Since Lisker's (1962) observation of intervocalic [m] as a bilabial nasal glide [w̃], this fact has been a problem for Telugu phonologists and to date no-one has given a satisfactory explanation. I attempt one in the later parts of this thesis (cf. 5.1.10.3).

5.1.7.1

Criticism of Prakasam's Treatment of Harmony

As already mentioned, Prakasam (1972) deals with vowel harmony under Sandhi. His Sutras 2 and 3 are of special interest. In Sutra 2 he deals with verb roots which undergo harmony in the 'prosodic acquisition process' (cf. 5.1.7). The verbal final and prefinal syllables undergo harmony, and the suffixes induce harmony. The Sutra covers only selected verbal suffixes, like u, a, te: and tu. These are not the only harmony inducing suffixes. His rule is not complete in itself and needs to be amended to a great extent.

Prakasam's data is not able to explain all the possibilities of harmony in Telugu. His example (1) a:ɖə + u ⟶ a:ɖu 'play' is misleading. If u is considered as the imperative suffix, the infinitive form of the verb is not explained nor am I aware of it in the language. I consider u as part of the verb root itself in infinitive form. Subba Rao also confronts the same problem of sometimes treating u as part of the infinitive and at other times treating u as the imperative suffix (cf. 5.1.6.1).

In his Sutra 3, Prakasam, without mentioning it by name, deals with noun stems and nominal suffixes. He has restricted himself to two case suffixes, dative and accusative, and a single pronominal predicate suffix. There are many other nominal suffixes which need to be considered under a rule of this type.

Prakasam's observation regarding the selection of the shape of the suffix based on the final syllable of the stem is justifiable. For example

$$\text{pilli} + \text{kə} \xrightarrow{S_3} \text{pilliki}$$

For forms like gorreku and annaku, I have in my data alternatives with ki: gorreku ~ gorreki and annaku ~ annaki. Any rule formulated should be able to account for such variant forms.

In Sutra 4 Prakasam deals with the plural suffix. When the plural suffix

is added to a nominal it induces harmony. His observation that the plural suffix, besides inducing harmony in the final syllable of the nominal stem, also induces harmony in the prefinal syllable if there is no intervening consonant cluster, is disputed by Rama Rao (cf. 5.1.10). In uneducated speech, this rule is not applicable as I see in the data (cf. 5.2.2).

Prakasam's Sutra 11 is in no way different from that of Subba Rao. The Sutra proposes a -m- insertion. Prakasam recognises the fact that -mu is the second person imperative in old Telugu, which no longer exists in modern Telugu. Other than that he has not made any observation. I present phonetic evidence for this rule in a later part of my thesis (cf. 5.1.10.3).

5.1.8

Objections to Krishnamurti's Treatment Raised by Ramachandra Rao (1974)

Ramachandra Rao (1974) in his unpublished paper dealt with some of the problems of vowel harmony in Telugu. The paper is not available to me, but owing to the fact that I was also a participant in the Seminar[16] where he presented the paper, I was able to note down the salient points of his contribution.

Ramachandra Rao questions Krishnamurti's general vowel harmony rule which states that long vowels induce harmony. In the following examples we find te: and ta: behaving differently.

aḍugu + te: ⟶ aḍigite: 'if asked'

aḍugu + ta: + ḍu ⟶ aḍuguta:ḍu 'he will ask'

If long vowels are accepted as harmonizers the form should be aḍagata:ḍu which it is not.

(Ramachandra Rao's contribution is commented on in the discussion of Rama Rao's contribution in Section 5.1.10)

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16 International Seminar on Telugu Phonetics held at Osmania University, Hyderabad, India, in February 1974.

5.1.9

Monomorphemic Vowel Harmony: Prabhakara Babu's (1976) Analysis

Prabhakara Babu (1976) also deals with vowel harmony in Telugu. He observes that in monomorphemic words of trisyllabic structure containing short vowels in the second and third syllables, the features of frontness and non-frontness operate to achieve a pattern of vowel harmony between the final and penultimate syllables. This type of harmony when coupled with absense or presence of lip-rounding he restricts to vowels /i/ and /u/. He excludes mid vowels /e/ and /o/ as they do not occur in final and penultimate syllables in his dialect. He describes harmony as involving successive high vowels or low vowels in second and third syllables. His data are restricted to harmony within words and not in Sandhi situations.

cilipi	'naughty'	ciluku	'to churn'
uniki	'existence'	urumu	'thunder'
teliwi	'intelligence'	erupu	'redness'
soridi		mogudu	'husband'
kalimi	'riches'	arudu	'rare'
pidapa	'later'	bedada	'calamity'
budaga	'bubble'	molaka	'sprout'
padaka	'bed'		

Babu further states that there are some mixed patterns where /a/ occurs in the second syllable followed by /i/ or /u/ in the final syllable. His examples are

nemali	'peacock'
taracu	'frequent'

He also observes that in these examples and many such others, there is a tendency for the second vowel to harmonize with the third but not vice versa, the resultant forms being:

nemali	>	nemili	but not nemala
taracu	>	tarucu	but not taraca

5.1.9.1

Comments

As noted above, Prabhakara Babu excludes mid vowels /ē/ and /ō/ from his study as they do not occur in final and penultimate syllables in his dialect. He states that no harmony is possible in the case of /i/ and /a/ in second and third syllables. For instance, he cites [rawika] 'blouse'. This is not a good example as the original old Telugu form, which still exists in certain dialects, is [raika] and [rawika] could be a modified form of the diphthong.

Babu's treatment of vowel harmony is phonetic and is restricted to monomorphemic forms only, so he has not dealt with suffixal harmony and because of his bias towards written forms, he has considered only the written style. He has certainly made a contribution by way of noting vowel quality but he has not dealt with the phonology of vowel harmony.

His exclusion of mid vowels /ē/ and /ō/ under the plea that they do not occur in final and penultimate syllables in his speech is acceptable for his ideolect. In fact, in the dialects of his area, there are forms like

[gunḍe]	'heart'
[wonṭe]	'camel'
and [gariṭe]	'ladle'

where /ē/ occurs in final position and which need to be taken into account. The vowel /ō/ does not occur in final position barring certain interjections but /e:/ and /o:/ which Prabhakara Babu also excludes from his study do occur in penultimate position in general. For example,

paṭe:lu	'village officer'
to:ḍe:lu	'wolf'
sapo:ṭa:	'Indian pears - fruit'
so:mbe:ri	'lazy fellow'

I have the impression that the short vowels /ē/ and /ō/ also occur in these

positions, but I do not have any examples in my data.

Prabhakara Babu's observation that, 'in mixed patterns progressive assimilation is not possible, but a regressive harmony is possible' (ibid., p. 17 fn) is no exception to my stress rules. As already explained by me in Section 3.2.2, the second syllable of a disyllabic word is unstressed, and the (ref. rule of stress) word final syllable bears a secondary stress. An unstressed syllable can undergo a harmony and a stressed syllable can induce harmony. An unstressed syllable may also be lost. I have some such forms in my data. For examples provided by Babu I have forms as,

Prabhakara Babu's data	My data	Gloss
nemali > nemili	[nemli]	peacock
taracu > tarucu	[tarcu]	often

5.1.10

Importance of Grammatical Categories - Rama Rao's Theory

A significant contribution to the theory of vowel harmony in Telugu was made by Rama Rao (1976). He points out the role of grammatical categories in directing the vowel harmony: the type and direction being determined by grammatical categories of the suffixes, but the actual process being conditioned by the vowels. He argues for the need for separation of the processes which differ according to grammatical categories, as (i) suffixal harmony, (ii) noun stem harmony, and (iii) verb stem harmony. Suffix harmony, according to him, is progressive assimilation and stem harmony is regressive assimilation.

Rama Rao cites the following suffixes as undergoing harmony:

(1) -ku — dative case marker

(2) -nu — (a) accusative case marker

(b) I sg. person marker (in the predicate)

(3) -wu 2nd person sg. marker (in the predicate)

(4) -mu 1st person plural marker

(5) -ru human plural marker

-ku and -nu as case markers occur with singular and plural nouns. The rest of the above suffixes occur after verbal or nominal predicates. In all the suffixes the vowel is harmonized by stems ending in a high front vowel, short or long.[17] His examples are given below:

(6) gadi + ku ⟶ gadiki 'to the room'

(7) manisi + nu ⟶ manisini (a) 'man' (acc.)
(b) 'I am a man'

(8) stri: + nu ⟶ stri:ni (a) 'woman' (acc.)
(b) 'I am a woman'

(9) manisi + wu ⟶ manisiwi 'you are a man'

(10) stri: + wu ⟶ stri:wi 'you are a woman'

(11) padimandi + mu ⟶ padimandimi 'we are ten persons'

(12) ra:kapo:ti + ru ⟶ ra:kapo:tiri 'you did not come'

Rama Rao observes that the noun plural morpheme -lu harmonizes the vowels in the stem in modern Telugu. This is also the case obtaining in Old Telugu.

The stem final high front short vowel changes to the corresponding back vowel. This type of change, however, is not possible when the front vowel is preceded by y. Rama Rao also states that if the stem is of less than two syllables, the penultimate i also changes to u, again when it is not preceded by y. To eliminate this y conditioning factor Rama Rao suggests treating this front vowel after y as an automatic vowel epenthesis. The defence for this is that the pronunciation of i in such a position is unstable. He provides the following examples:

(13) gadi + lu ⟶ gadulu 'rooms'

(14) kolimi + lu ⟶ kolumulu 'hearths'

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17 Rama Rao does not give any examples with a long vowel.

(15) poyyi + lu ⟶ poyyilu
poylu 'ovens'

(16) payiru + lu ⟶ payirulu
payrulu[18] 'crops'

Rama Rao shows that this type of harmonic process, which extends from stem final vowel to stem penultimate vowel, is blocked when the stem penultimate vowel is followed by an alveolar or retroflex consonant, as in the following examples:

(17) piḍikili + lu ⟶ piḍikiḷḷu 'fists'

(18) pandiri + lu ⟶ pandiḷḷu 'pandals'

(19) penimiṭi + lu ⟶ penimiṭṭu 'husbands'

(20) ma:miḍi + lu ⟶ ma:miḷḷu 'mangoes'

In the above examples, the penultimate vowel /i/ of the singular noun stem is followed by a geminate in the plural form. (This is due to the general rule of loss of stem final vowel in Sandhi and assimilation of consonants.) Rama Rao disagrees with the observations of Prakasam (1972) and Ramachandra Rao (1974), both of whom state that the harmonic process in such cases is blocked by the presence of (a) consonant cluster or geminate. Rama Rao holds the view that 'the nature of consonants is the source for blocking (of vowel harmony) as recognised by traditional grammarians' (Rama Rao, 1976: 28).

The harmonic process in noun stems is i > u which is conditioned by the vowel of the plural morpheme -lu. Rama Rao observes that this is probably dictated by the phonotactic constraints of the language that the final two syllables of a word should not have the sequence i-u. An exception to this constraint is that the sequence is permitted if the i is preceded by y. In other suffixes the harmony is u > i to conform with this constraint

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18 There is also another alternative form payrlu.

so the sequence i - u for (21) gadi + ku is not possible and has to be i - i, as in gadiki 'to the room'.

One interesting feature that Rama Rao observes is that there are both progressive and regressive assimilations to protect the same phonotactic constraint. A particular vowel in one suffix harmonizes the stem vowels and in other suffixes undergoes harmonization by the stem vowels. Rama Rao states that without knowing the class of suffixes, it is impossible to know the harmony type, so he classifies the suffixes as (a) those which undergo harmony and (b) those which induce harmony.

Rama Rao agrees with Krishnamurti (cf. 5.1.4) that in the harmony of nouns, only u of the stems undergoes this change.

(22)	mogudu + i + ku	⟶	mogudiki	'to the husband'
(23)	de:wudu + i + ku	⟶	de:wudiki	'to the God'
(24)	alludu + i + ku	⟶	alludiki	'to the son-in-law'
(25)	ku:turu + i + ku	⟶	ku:turiki	'to the daughter'
(26)	tammudu + i + ku	⟶	tammudiki	'to the younger brother'
(27)	cellelu + i + ku	⟶	celleliki	'to the younger sister'
(28)	ko:ḍalu + i + ku	⟶	ko:ḍaliki	'to the daughter-in-law'
(29)	Pantulu + i + ku	⟶	Pantuliki	'to the teacher'
(30)	atanu + i + ku	⟶	ataniki	'to him'
(31)	netturu + ṭi	⟶	nettuṭi	'of blood'[19]
(32)	nuduru + ṭi	⟶	nuduṭi	'of the forehead'

In the examples 22-30 the u of the stem undergoes a change as noted. In examples 31 and 32 the stem final syllable -ru is replaced by the oblique suffix. These noun stems with the addition of suffix -i or -ṭi change their grammatical class to adjectives. Rama Rao formalizes a rule and states

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19 i and ṭi are genitive or oblique case suffix variants in Telugu.

that u of nouns changes to i when derivation yields other grammatical classes, especially adjectives.

Rama Rao notes that u > i and the vowel of ṭi is capable of inducing harmony both forward and backward. Examples are:

(33) rendu + ṭi + ku ⟶ renḍiṭiki (i) 'for two objects'
(ii) 'by two o'clock'[20]

(34) mu:ḍu + ṭi + ku ⟶ mu:ḍiṭiki (i) 'for three objects'
(ii) 'by three o'clock'

(35) na:lugu + ṭi + ku ⟶ na:lugiṭiki[21] (i) 'for four objects'
(ii) 'by four o'clock'

Rama Rao also notes a i > u change in certain other numeral forms, as in

(36) padi + lu ⟶ padulu 'tens'

(37) padi + guru ⟶ paduguru 'ten people'

(38) enimidi + lu ⟶ enimudulu 'eights'

(39) tommidi + lu ⟶ tommudulu 'nines'

In his analysis of harmony in verbal stems Rama Rao gives the rule that non-initial -u- of verbal stems changes to i when followed by i in the suffix.

(40) aḍugu + i ⟶ aḍigi 'having asked'

(41) aḍugu + ina ⟶ aḍigina past relative participle of 'ask'

(42) aḍugu + ina: ⟶ aḍigina: 'even if (one) asks' (concessive form)

All these types of harmony are present both in old and modern Telugu as noted by Rama Rao. He also gives a rule for modern Telugu that u > a when u is followed immediately by a in the suffix. This harmony is restricted to verbs only.

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20 This meaning of time usage is not noticed by Rama Rao.

21 It is interesting to note that retroflex consonant does not hinder harmony.

(43) aḍugu + a ⟶ aḍaga infinitive of 'ask'

(44) aḍugu + aka ⟶ aḍagaka 'without asking'

(45) aḍugu + ani ⟶ aḍagani neg. relative participle of 'ask'

In Rama Rao's view the above cases are a result of straightforward assimilation; this was also observed by many of his predecessors.

Rama Rao disagrees with Subba Rao[22] as far as the necessity for recognising verb stems with non-initial a is concerned. He categorically states that it is hard to find a verb stem with non-initial a or i in modern Telugu. To make his point Rama Rao turns to noun derivations from verb stems, where there is a distinction of u-middle and a-middle stems.

Set (a): u-middle stems

(46) kuduru + ika ⟶ kudirika 'propriety'

(47) kuduru + i ⟶ kudiri 'having settled'

(48) kuduru + incu ⟶ kudirincu 'to settle'

Set (b): a-middle stems

(49) kadalu + ika ⟶ kadalika 'movement'

(50) kadalu + i ⟶ kadili 'having moved'

(51) kadalu + incu ⟶ kadilincu 'to move'

In Set (a) above, example (46) is a noun derivation, whereas (47) and (48) are verb derivations. In Set (b) above (49) is a noun derivation and (50) and (51) are verb derivations. Set (a) (46-48) represents -u- middle verb stems which consistently undergo harmony both in noun derivation and verb derivation. Set (b) (49-51) represents -a- middle verb stems which undergo harmony in cases of verb derivation only (50, 51), and remain neutral in noun derivations as in (49). Rama Rao justifies the existence of -a- middle verb

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22 Subba Rao's examples (cf. 5.1.6) for non-initial a and i are cemarcu and wardhillu. Rama Rao prefers to exclude these forms on the grounds that cemarcu is borrowed from Old Telugu and wardhillu is a Sanskrit-based verb wardh + illu.

stems by historical reasons. Rama Rao shows that in addition to vowel beginning suffixes there is the conditional suffix -te: before which roots change to i as in

(52) aḍugu + te: ⟶ aḍigite: 'if one asks'

That a long vowel induces vowel harmony has been agreed by many scholars ever since Krishnamurti (1957) pointed out this. However, Subba Rao (1971) observes that a long vowel can induce vowel harmony only when a consonant does not intervene. This is because the only example in his data for the conditional form is caduwte:, without harmony.

Ramachandra Rao (cf. 5.1.8) disputes the view of long vowels as harmonizers. He enlists the support of examples with ta: and te: and considers it unjustifiable that te: should be described as a harmonizer when ta: blocks harmony.

(53) aḍugu + ta: + ḍu ⟶ aḍuguta:du 'he will ask'
not * adagata:du

(54) aḍugu +ite: ⟶ aḍigite: 'if asked'

However, this argument of -ite: conditional marker inducing harmony is not acceptable to Rama Rao. He in turn suggests the following example to illustrate a long vowel as harmonizer.

(55) aḍugu + e: ⟶ aḍige: relative participle of 'ask'

Rama Rao's objection is that it is not possible to derive the relative participle without recognising the long vowel e: as harmonizer.[23]

Rama Rao gives some examples with ta: to prove that a: needs to be recognised as a harmonizer.

(56) a:ḍu + ta:ḍu ⟶ a:ḍata:ḍu 'he plays'

(57) ce:ru + ta:ḍu ⟶ ce:rata:ḍu 'he reaches'

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23 Ramachandra Rao, according to Rama Rao, has not provided any solution for this. The objection of Ramachandra Rao is not valid for me. ta: and te: have different grammatical functions and may therefore be expected to behave differently as regards vowel harmony.

(58) na:ṭu + ta:ḍu ⟶ na:ṭata:ḍu 'he plants'

He also notes exceptions like

(59) a:gu + ta:ḍu ⟶ a:guta:ḍu 'he stops'

(60) poguḍu + ta:ḍu ⟶ poguḍuta:ḍu 'he praises'

These examples are like (53) cited by Ramachandra Rao as an argument against a: as a harmonizer. Rama Rao states that a: functions as harmonizer only if the stem is of less than three syllables and the last consonant of the stem belongs to the coronal group. In some cases before applying this rule, certain other changes, such as consonant reduction and voicing may also take place, as in examples given below:

(61) veḷḷu + ta:ḍu ⟶ veḷta:ḍu 'he goes'

(62) koṭṭu + ta:ḍu ⟶ koḍata:ḍu 'he beats'

Rama Rao states that in Telugu short i, u and a can be grouped as one set with similarity of behaviour. These vowels have the privilege of occurrence in non-initial position in verbs only. Even in the case of noun forms these vowels occur, but Rama Rao observes that there are some 'fused forms' (probably he means the compound forms) denoting village names, trees and animals where non-initial vowels are different from this set, i.e., e:, o:, u:, u. His examples are shown below,

Trees: ganne:ru
ji||e:ḍu
tange:ḍu
ne:re:ḍu
palle:ru

Animals: kunde:lu 'rabbit'
ta:be:lu 'tortoise'
poṭṭe:lu 'ram'
pu:re:ḍu 'a kind of bird'

Village names: ongo:lu

kallu:ru

ponnu:ru

Many vowel-beginning grammatical suffixes begin with the vowels, i, u, a. All the three vowels induce harmony and of these three vowels, i and u also undergo the harmony process. The exceptions to this, Rama Rao suggests, are only the following suffixes:

conditional: te:

relative participle: e:

limited harmony with past: ta:

Rama Rao then considers some other cases where root vowels change to a. Like Subba Rao (1971), Rama Rao makes use of a -m- insertion rule in quotative imperative forms, for explaining vowel harmony in such cases. He derives the harmonic form of

aḍugu + (ani) the quotative imperative suffix as follows:

(63) aḍugu + (ani) + anna:ḍu

(64) aḍagam + (ani) + anna:ḍu 'he said to ask'

(65) aḍagamanna:ḍu

He gives a further justification for -m- insertion with examples from onomatopoeic forms like

(66) gubhillu-m-ani 'with a thumping noise'

(67) peṭillu-m-ani 'with a creaky noise'

In another rule Rama Rao cites the low vowel harmony of the vocative suffixes ra:, ayya: amma:, e:, aṇḍi. This rule operates when a verb root is followed by addressive particles or words with or without -w- insertion[24] as follows:

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24 but for -w- insertion in some forms, suffixes also behave like any other vowel harmony forms.

(68) kadulu + ra: ⟶ kadalara: male familiar address

(69) kadulu + w + e: ⟶ kadalawe:[25] female familiar address

(70) kadulu + w + ayya: ⟶ kadalawayya: male address

(71) kadulu + w + amma: ⟶ kadalawamma: female address

(72) kadulu + aṇḍi ⟶ kadalaṇḍi plural imperative

Rama Rao observes that inserted -w- seems to occur with stems that change their shape as in a- harmony.

5.1.10.1

Vowel Extension Rules

Rama Rao also proposes another harmony rule, that of a extension and i extension. He explains that in stem derivation certain compound verbs are formed by extending the roots with i or a. His examples are as follows:

I a extension

(73) arugu + a + ti:yu ⟶ aragadi:yu 'to rub'

(74) a:ru + a + we:yu ⟶ a:rawe:yu 'to dry'

(75) kanu + a + paḍu ⟶ kanapaḍu 'to appear'

(76) ceḍu + a + koṭṭu ⟶ ceḍagoṭṭu 'to spoil'

II i extension

(77) ra:lu + i + po:wu ⟶ ṛa:lipo:wu 'to fall down'

(78) kaḍugu + i + peṭṭu ⟶ kaḍigipeṭṭu 'to wash' (benefactive)

(79) kaḍugu + i + we:yu ⟶ kaḍigiwe:yu 'to wash' (completive)

Rama Rao recognises that a set of verb roots such as the compounds given above are added to the verbs to express certain aspects. Main verbs are extended

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25 This is another example of e: as harmonizer.

with a or i to form a compound verb stem. The choice of a or i extension depends on the aspect marker. Rama Rao states that the suffixed roots have to be marked with features as to whether they require a extension or that of i. He states that the a and i extension rule of compound verbs may be applied to word formation in general in Telugu. He marks the suffixes in inflexion as follows:

te:	conditional,	+ i - extension
ta	past ,	+ a - extension (limited)
e:	relative participle,	+ i - extension
m	indirect imperative,	+ a - extension
w	vocative " ,	+ a - extension
ra:	vocative " ,	+ a - extension

This type of marking, Rama Rao argues, would directly explain the source of the vowel that harmonizes the stem in derivation and inflection. This marking utilises only the short vowels which are suffixed direct to the roots of verb stems. Rama Rao, at the end of his thought-provoking paper, formulates a general rule for vowel harmony in Telugu.

(1) $[+\text{high}] \longrightarrow [\alpha\,\text{back}] \;/\; [\alpha\,\text{back}]$

α is plus in suffixes and verbs, minus in nouns, and plus or minus in numerals

(2) $\begin{bmatrix} +\text{back} \\ +\text{high} \end{bmatrix} \longrightarrow [+\text{low}] \;/\; (c)\ vc - c + [+\text{low}]$

Rules 1 and 2 are applicable to old and modern Telugu. Rule 2 is applicable to modern Telugu only, because it assumes that the verb roots are consonant ending. Rama Rao concludes his paper by observing that the vowel harmony in Telugu is neither symmetric, or asymmetric (ref: Aoki, 5.1.2). Directionality which Aoki considers as a possible criterion (ibid.) is disputed by Rama Rao in the case of Telugu vowel harmony. 'Direction is predictable only by identifying the forms (suffixes) for their capacity to change the vowels in

other forms, or in themselves', Rama Rao explains (ibid., 35).

5.1.10.2

Comments

Rama Rao describes harmony in terms of letter changes rather than as feature changing rules. He states that the non-initial -u of the stem changes to i when it is followed by i of the suffix. Examples:

(80) aḍugu+ i ⟶ aḍigi 'having asked'

(81) aḍugu + iṅa ⟶ aḍigiṅa past relative participle of 'ask'

This could be, in fact, stated as a rule of fronting and non-labialisation.

Rama Rao when arguing for a: as a harmonizer gives some examples like:

(82) a:ḍu + ta:ḍu ⟶ a:ḍata:ḍu 'he plays'

(83) ce:ru + ta:ḍu ⟶ ce:rata:ḍu 'he reaches'

In these cases the alveolars do not block the harmony and so are contrary to his rule.

In Rama Rao's analysis of items

(19) penimiṭi + lu ⟶ penimiṭlu 'husbands'

and (20) ma:miḍi + lu ⟶ ma:miḷlu 'mangoes'

the stem final vowel i is deleted and then, it seems, a reciprocal assimilation takes place. His observation of loss of word final vowel in Sandhi and consonant assimilation following that, is not sufficient at least for example No. 20. It can be formalised as 'the stem final vowel is dropped. Junction is marked by retroflexion and the last consonant of the stem is voiced with gemination of suffix initial consonant'. The -ṭ forms are explained later in Section 6.2.2. A similar rule can be given for final -u stems in forms with -ru, -lu in the stem final syllable, when followed by the plural suffix -lu, the stem final is dropped and the junction is marked by retroflexion and gemination of the suffix initial consonant. Examples:

go:ru + lu	⟶	go:ɭɭu	'nails'
u:ru + lu	⟶	u:ɭɭu	'villages'
ka:lu + lu	⟶	ka:ɭɭu	'legs'
ve:lu + lu	⟶	ve:ɭɭu	'fingers'

I have dealt with these forms prosodically under Sandhi (cf. 6.2).

Rama Rao deals with harmony of numerals with the plural suffix (in his examples (36) padi + lu —— padulu 'tens' and (38) enimidi + lu ⟶ enumudulu 'eights') as a separate rule. He does not draw attention to the similarity of the rule to that for disyllabic stems with final -i where close, back rounding harmony is also the rule.

Rama Rao describes the verbal bases where non-initial u changes to i when a suffix with i follows, e.g. (cf. I quote the earlier numbers of the examples)

(40) aḍugu + i ⟶ aḍigi 'having asked'

and other such forms. He does not specify the nature of the harmony. It can be stated as close, spread front harmony. The examples (43) and (44) of Rama Rao's data can be stated as open, back harmony.

(43) aḍugu + a ⟶ aḍaga infinitive of 'ask'

(44) aḍugu + aka ⟶ aḍagaka 'without asking'

Rama Rao has observed that short i, u and a can be grouped into one class as vowels behaving alike, solely on the basis that these vowels can occur in non-initial positions. Many suffixes begin with these vowels. All the three vowels participate in vowel harmony. i and u undergo this process and all the three induce it. Rama Rao fails to note a as a vowel undergoing harmony. His examples, however, show it. He does deal with conditional te:, relative participle e: and non-past ta:, but these suffixes are not covered by the above generalisation. In my view e: and a: of the above suffixes need to be considered along with i, u and a (see 5.3.2).

Both Subba Rao and Rama Rao propose a -m- insertion rule for presenting the case of the quotative imperative. Neither of them give a convincing explanation for the origin of m. Instead of taking a long course to justify the presence of m and then induce vowel harmony, it is necessary to take certain historical facts into consideration. Generative phonologists are usually not concerned with historical facts. But taking the history into account gives a neater and more reasonable analysis. Rama Rao (1976: 31), while discussing certain verb forms in Telugu states that 'we cannot describe these noun derivations, unless we bring in this a historical fact ... This collapsible rule is essentially a historical rule that crept into the present day grammar'. It would have been more apt for him to suggest a historical rule for -m- instead of insertion rules. It is a truism, unhappily often ignored, that no understanding of the present is complete without understanding the past.

5.1.10.3

The Suffix -mu

The -m- insertion rule relates to the -mu suffix. The -mu is a II person marker in old Telugu in both verbal forms and nominal forms. In old Telugu there existed two allomorphic variants for this marker in verbal forms, -mu occurring exclusively in imperative forms and -wu occurring in all other cases. Modern Telugu has retained -wu and has lost -mu. Though the -mu form of the imperative is not preserved in modern Telugu the relics are still preserved in such forms as the quotative imperative. The loss of -mu in modern Telugu can probably be explained as arising from the need to differentiate the imperative suffix from the -mu suffix of first person (plural) as they are homophonous. For most of the Telugu verb forms that have quotative imperative forms, the rule proposed by me hereunder works very well. I will explain

this, taking caduwu- 'to read' as an example.

caduwu + mu ⟶ caduwumu
v imp. suffix 'you read!'

caduwumu + ani + anu ⟶ *caduwumu ani anu
'you read' 'having said' 'say' you say 'you read'

-u of mu is lost (as a general rule of Sandhi)
↓
*caduwumani anu
↓ a of ani induces harmony and we get
cadawamani anu

(the forms marked with asterisks are intermediary stages for arriving at the final form of the quotative imperatives.)

Rama Rao and Subba Rao proposed a -w- insertion rule. This too seems to me not to be necessary. The imperative suffix of old Telugu is once again taken into consideration for explaining this principle. I will illustrate this process with the verb kadulu 'to move'.

kadulu + -mu ⟶ kadulumu + e: ⟶ kadulume:
'to move' imp. suffix F. voc. suf. 'you (f) move'

In this case -mu is not lost but undergoes a typical phonetic change which is found elsewhere in Telugu, that is, intervocalic and word final -m are pronounced not as bilabial nasal stops but as bilabial or labio-dental continuants, viz. [w̃] or [ṽ]. For instance kadalawe: may be derived as follows:

kadulu + mu + e: ⟶ kadulume:
'to move' 'imperative suffix' (feminine person) voc. suffix. (fem) move! (imp.)

kadulume:
↓ m > w̃
* kaduluw̃e:
↓ then loss of nasality plus open vowel harmony takes place and we get
kadalawe:

The same principle will apply to other vocative suffix forms.

kadulumu + ayya (voc. suf. masc.) ⟶ kadulumayya ⟶ *kaduluw̃ayya

↓ loss of nasality and open harmony

kadalawayya

This historical derivation can be fully justified by the following spoken and written forms in modern Telugu:

Old Telugu	Modern Spoken	Modern Written	Gloss
ma:ma	ma:w̃a	ma:wa	'maternal uncle'
e:miṭi	e:w̃iṭi	e:wiṭi	'what' (interrogative pronoun)
e:mamma:	e:w̃amma:	e:wamma:	address form (fem.)

Though Rama Rao has time and again stressed that o never induces harmony, and restricted the process to the five vowels i, u, e: a and a:, his examples in fact seem to show that o is involved. When he deals with types of compound verbs where the auxiliary verb of the compound verb participates in the harmony, he shows both short and long o as involved, in the case of ceḍu and koṭṭu which he gives as ceḍakoṭṭu 'to spoil' and ra:lu+po:wu which he gives as ra:lipo:wu 'to fall down'. There are in fact, two different harmonies here, but he deals with the harmony by a extension and i extension respectively for these forms (cf. 5.1.10.1). His only justification for a and i extension is that the rule enables him to explain the harmony but it has no reality as far as the phonological system of Telugu is concerned.

Rama Rao's harmony rule of a extension and i extension (cf. 5.1.10.1) is not necessary according to my analysis. In case of a extension I have only one explanation to offer. In old Telugu the infinitive of the verb forms had an alternative shape in consonantal -n ending, namely, -an, e.g., aragan as opposed to arugu. Though modern Telugu lost these variants, sometimes in

cases like those mentioned by Rama Rao under a extension, some relics are present. His examples, according to my analysis, will be re-written as:

aragan + ti: yu ⟶	(i)	'araga'ti:yu	'to rub'
	(ii)	'aragadi:yu	
a:ran + ve:yu ⟶	(i)	'a:ra've:yu	'to dry'
	(ii)	'a:re:yu	
kanan + padu ⟶	(i)	'kana'padu	'to appear'
	(ii)	'kanabadu	
cedan + kottu ⟶	(i)	'ceda'kottu	'to spoil'
	(ii)	'cedagottu	

In such compound formations the verb root final nasal of the first verb is lost before the following consonant of the second verb. In normal speech the second verb maintains its stress pattern in the initial syllable of the word. In fast speech the stress is lost and the consonant is voiced. Rama Rao noted the forms aragadi:yu and cedagottu as both having voiced consonants, but did not offer an explanation of this.

A further explanation for a extension which is also applicable to i extension can be given in terms of semantic criteria. Probably Rama Rao visualised the same without probing deeper into it. The semantic range is as follows:

(a) in the case of a extension compound verb forms, the meaning of the compound is not the meaning of the two separate words, i.e. a true compound, example:

aragan v.inf. 'to be worn'
ti:yu 'to take off'
aragati:yu 'to take so as to wear away', to rub

a:ran v. inf. 'to dry'
ve:yu 'to put'
a:rave:yu 'to put out to dry'

and so on. The relationship between two verbs can be described as cause and effect.

(b) in the case of i extension compound verb forms, in Rama Rao's examples, the meaning of the constituents of the compound form is simply a past participle followed by a finite verb form.

Examples:

kaḍugu	'to wash'	kaḍugu + peṭṭu	
peṭṭu	'to put, keep'	kaḍigipeṭṭu	'wash and keep it'
ra:lu	'to fall, drop'		
po:Wu	'to go away'		
		ra:lu +po:Wu ⟶ ra:li po:Wu	'to fall and go away'

These examples make it clear that a extension compounds have a different meaning from the meanings of the two words of which they are composed and i extension compounds have the meaning of the two words. This can thus be the criterion for which will have a extension (or open harmony) and which i extension (or front harmony).

Apart from these, it is also noted that but for paḍu, the other three verbs mentioned under a extension by Rama Rao belong to the transitive verb class. The verbs under i extension contain two transitive and one intransitive forms. ra:li po:Wu is an intransitive example. This demonstrates that in both a and i extension forms, transitive and intransitive forms occur. So, it is concluded that identifying mere grammatical forms alone is not important in such compound verb forms undergoing vowel harmony, but semantic considerations are also essential.

Rama Rao's analysis of vowel harmony in Telugu is by far the most thought provoking analysis available to us. His paper proves to be a useful guide to the multifaceted issues posed by an often discussed, highly controversial and quite significant phonological process.

5.2.0

Theoretical Framework Preferred

This overview of work on vowel harmony in Telugu shows that there has not been a complete description of vowel harmony in Telugu to date. In this thesis I make use of such of this earlier material as I find valid, as well as my own findings, and attempt to present a fuller account of vowel harmony within the theoretical framework of prosodic phonology, a theory which makes it possible to present a clear picture of the structural relationships involved.

5.2.1

Vowel Lowering Phenomenon in Vowel Harmony

Only two scholars of modern times have dealt with this topic in the past, Kelley (1959) and Prabhakara Babu (1976). Both of them are unaware of Gidugu Ramamurti's study and Prabhakara Babu is even unaware of Kelley's work.

Kelley's contribution to phonetic vowel harmony is taken as point of departure for my description.

In his examples he cites forms like [ɳɛll ʊ][mɪś + ʊndɪ #]. The forms in isolation are as follows:

[nɛ̣la + lu] and [miṣa + undi]

In [nɛ̣la], the first syllable is already lowered in the environment of the low vowel in the second syllable. In spelling pronunciation it would be nela.

nela + lu ⟶ nɛ̣lalu ⟶ nɛ̣llʊ

The loss of the second syllable in Sandhi results in the cluster -ll- . The vowel that is lost may still leave behind qualities of some prosodic importance; it may be responsible for the lowering of the first and last vowels. It is in the following two phases.

(1) nela > nɛla — ɛ is a more open vowel

(2) nɛla + lu ⟶ nɛllʊ — after losing the second syllable -lu has a more open quality [ʊ] harmonising with the more open vowel qualities of the stem.

It is necessary to note that even before the Sandhi process is considered, the word in isolation has slight phonetic lowering of the initial syllable nucleus in the environment of a low back vowel. If the initial syllable has a low vowel followed by a high vowel in the next syllable, the low back vowel moves towards a central position.[26]

padi 'ten' ⟶ pədɪ

5.2.2

Vowel Harmony in Monomorphemic Forms: A Case Study for Social Dialects

Many scholars of Telugu, as we have seen in the survey earlier, noted that the stem initial vowel does not participate in (or is not affected by) vowel harmony but failed to see the reason for this because they did not take stress into account. It is because the initial syllable is a stress bearing syllable that it is not susceptible to harmony. However, the place of stress in a word depends on the caste and level of education of the speaker.

Depending on the position of stress the stem initial syllable participates in vowel harmony: sometimes it induces harmony and in other cases it undergoes harmony. To bring out this fact, I attempt hereunder a brief analysis of vowel harmony in monomorphemic forms. For this purpose I classify words as disyllabic, trisyllabic and tetrasyllabic.

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26 The central quality vowel is not marked in the rest of the examples in the thesis. This is because I use a broad transcription.

(i) disyllabic words: This group of words has a two way harmonic process operating in the speech of individuals. The initial syllable induces harmony in the second syllable which readily harmonizes with the initial syllable in the speech of educated and uneducated Brahmin speakers. Stress in the initial syllable is present in the speech of these speakers. The other vowel harmony system is that the second syllable induces harmony in the first syllable. This is the usage of uneducated non-brahmin speakers. In their speech it is the second syllable of disyllabic words that is stressed. Examples are given below.

5.2.2.1

Disyllabic Forms

The initial syllable of a disyllabic form is stressed in general for all the speakers, but under the conditions of social variation, the stressed syllable may (i) lose its stress and undergo harmony or (ii) retain the word initial stress and induce harmony.

(i) First syllable undergoing harmony

There are three types of harmony in this case. They are (a) Change in V grade but not in prosody; (b) Change in prosody only and (c) Change in V grade and prosody.

(a) Change in V grade but not in prosody: raising harmony:

written form	social variant form	gloss
'mabbu	mobbu	'cloud'
'tawwi	towwi	'having dug'
'pappu	poppu	'pulses'
'podi	pudi	'powder'
'ne:nu	ni:nu	'I am'

(b) Change in prosody only: backing harmony:

written form	social variant form	gloss
'inko:	unko:	'another'
'dikku	dukku	'direction'
'je:bu	jo:bu	'pocket'
'gatti	gɤtti	'strong'
'rendu	rondu	'two'

(c) Change in V grade and prosody: raising and fronting harmony:

written form	social variant form	gloss
'ra:tri	re:tri	'night'
'manci	minci	'good'

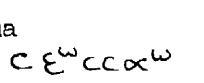
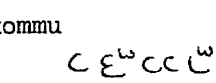
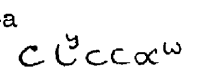
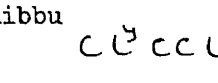
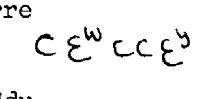
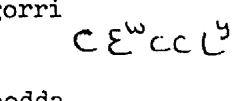
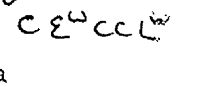
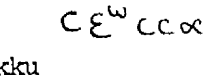
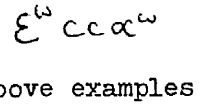
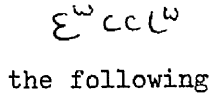
(ii) First syllable inducing harmony

There are two types of harmony in this case. (a) involving a change in prosody and (b) involving a change in V grade but not in prosody.

(a) Change in Prosody: fronting harmony;

written form	social variant form	gloss
'ce:nu	ce:ni	'field'
'pi:ka	pi:ki	'throat'

(b) Change in V grade but not in prosody: raising harmony and lowering harmony:

written form	social variant form	gloss
komma 	kommu 	'branch'
dibba 	dibbu 	'mound, heap'
gorre 	gorri 	'sheep'
boddu 	bodda 	'navel'
okka 	okku 	'only one'

The above examples provide the following information.

(1) that the $^{w}/_{y}$ Prosody generally remains but V grades change;

(2) that change in prosody is less common;

(3) if in the disyllabic structure the syllable nuclei are of the given relationships the social variants differ as shown below:

written disyllabic form				social variant disyllabic form		
mid	-	open	→	mid	-	close
close	-	open	→	close	-	close
mid	-	mid	→	mid	-	close
mid	-	close	→	mid	-	open

This generalisation of disyllabic word structure in prosodic terms has been arrived at after a careful consideration of a large number of examples.

5.2.2.2

Trisyllabic Forms (Monomorphemic)

In trisyllabic forms the situation is slightly different. Trisyllabic forms of canonical shape cvccvcv are considered here. The possibilities of harmony are greater as shown below.

(1) As mentioned in 3.2.2 (rule 3) the first syllable is stressed but it is the second syllable which has a secondary stress, that induces harmony, and the third syllable undergoes harmony. There is a change in V grade and prosody.

(i) Raising and fronting harmony

written form	social variant form	gloss
takkeda	takkedi	'balance'
bokkena	bokkeni	'bucket'

(ii) Lowering and backing harmony

written form	social variant form	gloss
abba:yi	abba:ya	'boy'
amma:yi	amma:ya	'girl'
ma:ga:yi	ma:ga:ya	'mango pickle'

(2) The word initial syllable of the trisyllabic word is stressed and induces harmony. The second syllable which is unstressed undergoes harmony.

Change in V grade and in prosody: raising and fronting harmony

written form	social variant form	gloss
senaga	seniga	'chick peas'
mirapa	miripa	'chillies'

(3) The third syllable of a trisyllabic word induces harmony and the second syllable undergoes the process. The third syllable bears a secondary stress, whereas the second syllable is unstressed and weak (cf. 3.2.2). There are many cases of this kind.

The two types of harmony are (i) change in V grade only and (ii) change in V grade and prosody.

(i) Change in V grade only: raising harmony and lowering harmony

written form	social variant form	gloss
modalu	modulu	'beginning'
pogaru	poguru	'arrogance'
ekkuwa	ekkawa	'much, more'

(ii) Change in V grade and prosody: raising and fronting harmony

written form	social variant form	gloss
musali	musili	'old age'
ka:vali	ka:vili	'guarding'

(4) In cases where the word initial syllable is unstressed, and the second syllable is stressed, it induces harmony and the first syllable undergoes harmony. Generally this situation obtains in the speech of uneducated

speakers, both Brahmin and non-Brahmin classes. I observe from my data that this is found at a slightly higher rate in the case of non-Brahmin speakers. The possibilities are change in V grade only and change in prosody only.

(i) Change in V grade: raising harmony

written form	social variant form	gloss
caduvu	coduvu	'study'
kaḍupu	koḍupu	'stomach'
tammuḍu	tommuḍu	'younger brother'

Only one case of change in V grade with lowering harmony is found in my data.

me:ḷa:lu	mɛ:ḷa:lu	'musical band'

(ii) Change in prosody: backing harmony

written form	social variant form	gloss
dikkuna	dukkuna	'in the direction of'
iddaru	uddaru	'two persons'
ippuḍu	uppuḍu	'now'

(5) The third syllable -am, [-ãw̃], has a tendency to change to -em, [-ẽw̃], fronting harmony, in the speech of uneducated speakers, who are not exposed to certain sociocultural influences. This third syllable has a secondary stress.

written form	social variant form	gloss
kuṭumbam	kuṭumbeW̃	'family'
a:mudam	a:mideW̃	'castor'

(6) The second syllable /a/ changes to /e/ between apical consonants in uneducated speech: change in prosody and V grade; fronting and raising harmony.

written form	social variant form	gloss
unnaṭlu	unneṭlu	'as it is'
bha:ṣalu	ba:selu	'languages'

(7) The second syllable nucleus /u/ changes to /i/ before a velar consonant: Change in prosody; fronting harmony.

written form	social variant form	gloss
ka:nuka	ka:nika	'gift'
ba:ḍuga	ba:ḍiga	'rent'

5.2.2.3

Tetrasyllabic Forms

Tetrasyllabic forms in Telugu are fewer in number. Most of the forms available in spoken language are Sanskrit borrowings. As I am at present considering only such forms which are monomorphemic in nature, I do not take into account those which have more than one morpheme (for example with plural suffix -lu).

(1) Changes in V grade

(i) lowering harmony:

written form	social variant form	gloss
anuma:nam	anama:naw̃	'doubt'
bahuma:nam	bagama:naw̃	'gift'

(ii) raising harmony:

written form	social variant form	gloss
padakoṇḍu	padukoṇḍu	'eleven'

(2) Changes in V grade and prosody: fronting and raising harmony

written form	social variant form	gloss
koḍavali	koḍivili	'pickaxe'

5.3.0

Suffixal Harmony

The earlier work in Telugu vowel harmony suggests that the grammatical categories involved need to be given due consideration, but suffixes have not been dealt with from this view point, except by Rama Rao in part. I wish to deal with suffixes separately from stems and present nominal suffixes and verbal suffixes and give a detailed account of each, showing their relationship with the stem. In fact, harmony in relation to these suffixes, except for -lu, has not previously been considered in full. -lu, which is the only harmony inducing suffix is considered separately. (cf. 6.2.2)

In order to describe the vowel system of Telugu a system of three V grades of openness needs to be set up to account for open vowels /ā/ /ā:/, mid vowels /ē/ /ē:/, /ō/ /ō:/ and close vowels /ī/ /ī:/ and /ū/ /ū:/. The three grades are ◌ా, which can be long and short viz., ◌ా , ◌ా; ◌ె which can be long and short, viz., ◌ే , ◌ే ; and ◌ు which can be long and short, viz., ◌ూ , ◌ు. All the three grades, ◌ు , ◌ె, ◌ా, function in w and y prosodic syllables.

Nominal suffixes are dealt with first, and verbal suffixes are dealt with separately later.

5.3.1

Nominal Suffixes

Under this heading are included case markers and person markers.

-nu first person (singular) marker in pronominal predicates; accusative case marker.

-wu second person marker in pronominal predicates.

-mu first person (plural) marker in pronominal predicates.

-ku dative case marker.

-lo: locative case marker.

-i possessive/genetive case marker.

(i) - CV Suffixes

The nominal suffixes -nu, -wu, -mu, -ku have the same V grade, namely, ◌ు, but the prosodies differ depending on the prosody of the last syllable of the noun stem to which they are affixed. The systems at C are P, N, G, L.

P	(Plosive)	term k	(dorsal)	P_k◌ు	(dative case suffix)
N	(nasal)	term t	(apical)	N_t◌ు	(for 1st sg. pronominal predicate)
		term t	(apical)	N_t◌ు	(accusative case suffix)
		term p	(labial)	N_p◌ు	(for 1 pl. pronominal predicate)

G (glide) term p (labial) G_p (for 2nd person pronominal predicate suffix)

L (liquid) term t (apical) L_t (plural suffix)

(ii) -CV̄ Suffix

There is one nominal case suffix of this structure, namely -lo:, the locative case suffix. The structure is $L\bar{\xi}^{w}$.

(iii) -V Suffix

There is only one nominal suffix of this structure, the possessive case marker -i which has the structure ξ^{y}.

Of the above nominal suffixes, possessive suffix -i does not induce harmony as is explained in Section 5.1.4.1. Hence it is not discussed further. The locative suffix -lo: occurs as a first suffix followed by any case marker. As a first suffix it will not induce any harmony in the noun stem, but does so as a second suffix. It is therefore considered under the heading of first and second suffixal forms in Section 5.3.1.4.

5.3.1.1

The Suffix -mu

-mu first person plural marker occurs only as a second suffix after the plural suffix -lu. It thus differs from the person suffixes which come directly after the stem. It is used in a reduced form and is therefore treated separately.

As mentioned earlier in Section 5.1.10.3 -mu is reduced to [w̃u] and also to [w̃].

5.3.1.2

The Suffixes -ku and -nu (case markers)

The prosodic relationship of -ku and -nu suffixes with the nominal stem is the same. -nu differs from -ku in only one respect, i.e. after the

-am ending nouns. That will be treated separately. (see Section 6.2.2)

The structure of the suffix is Cɬ .

(1) Where the V system of the final syllable of the nominal stem is ʉ, and the syllable is w prosodic, the suffix either harmonizes with it and is w prosodic or stem final syllable and suffix are both y prosodic. For example,

Backing harmony and fronting harmony

u:ru + kɬ	⟶	u:ruku or	u:riki	'to the village'
V̄Cɬʷ + Cɬ		V̄CCʷCCʷ	V̄CCʲCCʲ	
ka:lu + kɬ	⟶	ka:luku or	ka:liki	'to the leg'
CV̄CCʷ + Cɬ		CV̄CCʷCCʷ	CV̄CCʲCCʲ	
u:ru + nɬ	⟶	u:rini or	u:runu	'village' (accusative)
V̄CCʷ + Cɬ		V̄CCʲCCʲ	V̄CCʷCCʷ	
ka:lu + nɬ	⟶	ka:lunu or	ka:lini	'leg' (accusative)
CV̄CCʷ + Cɬ		CV̄CCʷCCʷ	CV̄CCʲCCʲ	

If the final syllable of the nominal stem is ɬ and y prosodic the two different types of harmony are not possible. Only y prosody is possible, as in the examples below.

Fronting harmony

ko:ḍi + kɬ	⟶	ko:ḍiki	'to the hen'
ko:ḍi + nɬ	⟶	ko:ḍini	'hen' (accusative)
CV̄CCʲ + Cɬ		CV̄CCʲCCʲ	
pilli + kɬ	⟶	pilliki	'to the cat'
CVCCCʲ + Cɬ		CVCCCʲCCʲ	

(2) (i) If the nominal stem final syllable is w prosodic with ɑ, the suffix either harmonizes and is w prosodic or does not harmonize and is y prosodic. For example,

Backing harmony

pi:ṭa + kɬ	⟶	pi:ṭaku	'to the plank'
CV̄CCɑʷ + Cɬ		CV̄CCɑʷCCʷ	
kaḍawa + kɬ	⟶	kaḍawaku	'to the pot'
CVCVCɑʷ + Cɬ		CVCVCɑʷCCʷ	

non-harmonic

pi:ṭa + kɭ	⟶	pi:ṭaki	(ibid.)
CV̄CC + CC		CV̄CCCC^{y}	
kaḍawa + kɭ	⟶	kaḍawaki	(ibid.)
CVCVCC + CC		CVCVCC^{y}C	

(ii) In the nominal y prosodic stem final syllable with ɛ, the suffix either harmonizes and is y prosodic or does not harmonize and is w prosodic. For example,

Frontness harmony

ginne + kɭ	⟶	ginneki	'to the metal vessel'
peṭṭe + kɭ	⟶	peṭṭeki	'to the box'
CVCCɛ^{y} + CC		CVCCɛ^{y}C	

Non-harmonic

ginne + kɭ	⟶	ginneku	(ibid.)
peṭṭe + kɭ	⟶	peṭṭeku	(ibid.)
CVCCɛ^{y} + CC		CVCCɛ^{y}C	

In the Kalinga dialect of Telugu there is prosodic harmony of the suffix with the final stem syllable, and the stem final V grade harmonizes with the suffix V grade. For example in the Kalinga dialect we have forms like,

ginne + kɭ	⟶	ginniki	'to the metal vessel'
peṭṭe + kɭ	⟶	peṭṭiki	'to the box'
CVCCɛ^{y} + CC		CVCCi^{y}C	

However w prosodic forms do not have this type of V grade harmony. For instance, peṭṭuku and ginnuku forms do not occur in the language. y prosodic forms are found in the informal speech style of Kalinga dialect.

5.3.1.3

The Suffixes -nu and -wu (person markers)

I find no difference in the harmonic process between person markers and

case suffixes following a noun stem; both undergo harmony on the basis of the stem final syllable prosody. In the case of person markers we observe the following.

Both -nu and -wu undergo harmony following a nominal stem as shown below. If the V of the final syllable of the nominal stem is ɪ and the syllable is y prosodic, then there is y prosodic harmony of the suffix. For example,

manigi + nɪ	⟶	manigini	'I am a man'
manigi + wɪ	⟶	manigiwi	'you are a man'
CVCVCCV + Cɪ		CVCVCCVCV	

This is noted as fronting harmony.

If the V of the final syllable of the nominal stem is ʊ and the syllable is w prosodic, the harmony is w prosodic or there may be no harmony, the suffix being y prosodic. Examples are,

ra:ju + nɪ	⟶	ra:junu	'I am a king'
CV̄CCV + Cɪ		CV̄CCVCV	
		ra:juni	
		CV̄CCVCV	
ra:ju + wɪ	⟶	ra:juwu	'you are a king'
CV̄CCV + Cɪ		CV̄CCVCV	
		ra:juwi	
		CV̄CCVCV	

These examples further strengthen the argument that the structure of the suffix is Cɪ.

However, if the V of the final syllable of the nominal stem is ɑ and w prosodic, there is open choice for the speaker, i.e. the suffix can be w or y prosodic. For example,

bomma + nu ⟶ (i) bommanu 'I am a doll'

CvCCα$^{\omega}$ + CC CvCCα$^{\omega}$C$^{\omega}$

(ii) bommani

CvCCα$^{\omega}$C^{y}

bomma + wu ⟶ (i) bommawu 'you are a doll'

CvCCα$^{\omega}$ + CC CvCCα$^{\omega}$C$^{\omega}$

(ii) bommawi

CvCCα$^{\omega}$C^{y}

w prosodic forms are considered as formal, whereas y prosodic forms are considered informal, by the speakers.

5.3.1.4

The Functional Difference Between First and Second Suffixal Forms

The plural suffix -lu can only occur as a first suffix. All the other suffixes can occur as a second suffix. The following examples clarify the situation.

katti + lu —1st suffix→ kattulu 'knives'

CvCC^{y} + C$^{\omega}$ CvCC$^{\omega}$C$^{\omega}$

kattulu + ku —2nd suffix→ (i) kattulaki 'to the knives'

CvCC$^{\omega}$CC$^{\omega}$ + CC CvCC$^{\omega}$Cα$^{\omega}$C^{y}

(ii) kattulaki

CvCC$^{\omega}$Cα$^{\omega}$C$^{\omega}$

gadi + lu ⟶ gadulu 'rooms'

CvC^{y} + C$^{\omega}$ CvC$^{\omega}$C$^{\omega}$

gadulu + nu ⟶ (i) gadulani 'rooms' (accusative)

CvC$^{\omega}$C$^{\omega}$ + CC CvC$^{\omega}$Cα$^{\omega}$C^{y}

(ii) gadulanu

CvC$^{\omega}$Cα$^{\omega}$C$^{\omega}$

ra:ɳi + lu ⟶ ra:ɳulu 'queens'
CV̄CᵚC + CᵚC ⟶ CV̄CᵚCCᵚ

ra:ɳulu + lo: ⟶ ra:ɳulalo: 'among the queens'
CV̄CᵚCCᵚ + Cɛ̄ᵚ ⟶ CV̄CᵚCɑᵚCɛ̄ᵚ

One can argue that w prosodic harmony, after the addition of the first suffix, is due to -lu, and that ≙ marks the junction between -lu and the following suffixes (i.e. the second suffix), viz. -ku, -nu, -mu, -wu and -lo:. In such cases the presence of a is therefore best treated as Sandhi rather than harmony. As seen above suffixes -ku, -nu and -wu can be w prosodic harmonizing in backness or y prosodic, without harmony.

Alternately, one could say that the case suffixes, when functioning as second suffixes, induce backing and lowering harmony. For example,

gadi + lu + lo: ⟶ gadulalo: 'in the rooms'
CVCᵚ + CᵚC + Cɛ̄ᵚ ⟶ CVCᵚCɑᵚCɛ̄ᵚ

gadi + lu + kU ⟶ gadulaku
CVCᵚ + CᵚC + CU ⟶ CVCᵚCɑᵚCᵚC

The dative and accusative case suffixes as we have seen in 5.3.1.2 behave in a non-harmonic fashion. The resultant forms are

gadi + lu + kU ⟶ gadulaki (ibid.)
CVCᵚ + CᵚC + CU ⟶ CVCᵚCɑᵚCᵚ

gadi + lu + nU ⟶ gadulani (ibid.)
CVCᵚ + CᵚC + CU ⟶ CVCᵚCɑᵚCᵚ

Note also the following case with -mu as the second suffix:

pilla + lu ⟶ pillalu 'children'
CVCCɑᵚ + CᵚC ⟶ CVCCɑᵚCᵚC

pillalu + mu ⟶ (i) pillalamu 'we are children'
CVCCVCᵚC + CᵚC ⟶ CVCCVCɑᵚCᵚC

(ii) pillalimi
CVCCVCᵚCᵚ

In the case of (ii) above, i.e. pillalimi, it is noted that there is a change not only in prosody but also in vowel grade.

A form with -amu, with backing harmony, is found in informal speech style of the Rayalaseema area. The form with -imi, fronting and raising harmony is found in the Kalinga dialect.[27] The Telangana dialect has pillalamu which is similar to the written form.

5.3.1.5

The Plural Suffix -lu

Though there are many nominal suffixes as listed in Section 5.3.1, it is only the plural suffix -lu as a first suffix that induces harmony in the noun stem. All other nominal suffixes undergo harmony.

When a nominal stem is followed by the plural suffix backing harmony is induced by the suffix, and this may extend up to, but not affecting, the stem initial syllable. For example,

gadi + lu	⟶	gadulu	'rooms'
CVCᵢ + Cᵤ		CVCᵤCᵤ	
kolimi + lu	⟶	kolumulu	'hearths'
CVCᵢCᵢ + Cᵤ		CVCᵤCᵤCᵤ	

If the noun stem has one of the consonants r, l, ṭ and ḍ in the final syllable or prefinal syllable, harmony extends up to the consonant and stops at that consonant. Consonantal harmony may also take place. This is dealt with fully under Sandhi (cf. 6.2.2).

There is also another type of plural formation which occurs only with -aw̃ ending nouns. It is dealt with under Sandhi (Section 6.2.2).

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27 Rama Rao (cf. 5.1.10) observes a similar form with padimandimi 'we are ten people' and claims that suffix harmonizes with the nominal stem. (Rama Rao, 1976: 27)

5.3.2

Verbal Suffixes

Verbal suffixes in Telugu differ from nominal suffixes in that instead of being harmonised by the root, they induce harmony in the root. Scholars who worked in the field earlier have not considered all the possibilities, and in this section I make an attempt to do so and examine the different suffixes in relation to the types of harmony they induce.

The person markers used with finite verbs are similar in form to the nominal suffixes -nu, -mu and -wu, but do not participate in vowel harmony. -ḍu also belongs to this set. As they do not participate in vowel harmony, they are not considered here.

5.2.2.1

Fronting Harmony (1)

Suffixes with i and æ induce a close, front, spread harmony.

-i past participle suffix - C^{y}

-ina past participle vb.adj.suffix - $C^{y}C\alpha^{w}$

-ina: concessive suffix - $C^{y}C\bar{\alpha}^{w}$

-æ past tense suffix - $\bar{\alpha}^{y}$

Examples:

aḍugu + i → aḍigi 'having asked'
$VC\overline{C^{w}C^{w}} + C^{y} \rightarrow VC\overline{C^{y}C^{y}}$

aḍugu + ina → aḍigina 's.g. that is asked'
$VC\overline{C^{w}C^{w}} + C^{y}C\alpha^{w} \rightarrow VC\overline{C^{y}C^{y}C\alpha^{w}}$

aḍugu + ina: → aḍigina: 'even if asked'
$VC\overline{C^{w}C^{w}} + C^{y}C\bar{\alpha}^{w} \rightarrow VC\overline{C^{y}C^{y}C\bar{\alpha}^{w}}$

aḍugu + æ + nu → aḍigænu 'I asked'
$VC\overline{C^{w}C^{w}} + \bar{\alpha}^{y} + CC^{w} \rightarrow VC\overline{C^{y}C\bar{\alpha}^{y}}\,CC^{w}$

caduwu + i → cadiwi 'having read'
$CVC\overline{C^{w}C^{w}} + C^{y} \rightarrow CVC\overline{C^{y}C^{y}}$

caduwu + ina → cadiwina 's.g. that is read'
$CVC\overline{C^{w}C^{w}} + C^{y}CV \rightarrow CVC\overline{C^{y}C^{y}}CV$

caduwu + ina: → cadiwina: 'even if read'

cvcʊcʊ + ʊcv̄ cvcʊcʊcv̄

caduwu + æ + nu → cadiwænu 'I read'

cvcʊcʊ + ǣʏ + cʊ cvcʊcǣʏcv

kudurcu + i → kudirci 'having arranged'

cvcʊccʊ + ʊ cvcʊccʊ

kudurcu + ina → kudircina 'some thing that is arranged'

cvcʊccʊ + ʊcv cvcʊccʊcv

kudurcu + ina: → kudircina: 'even if arranged'

cvcʊccʊ + ʊcǣʷ cvcʊccʊcv̄

kudurcu + æ + nu → kudircænu 'I arranged'

cvcʊccʊ + ǣʏ + cʊ cvcʊccǣʏcv

5.3.2.2

Fronting Harmony (2) and also in Compound Verbs

Suffixes with ε^{y} exponent [e], $\bar{\varepsilon}^{y}$ exponent [e:], and $\bar{\varepsilon}^{w}$ exponent [o:] (second verb of a compound verb) induce fronting harmony.

Suffixes:

-e (second verb of a compound verb) ; $\varepsilon^{ʏ}$

-e: Verbal adjective and relative participle, te: conditional ; $\bar{\varepsilon}^{ʏ}$

-o: (second verb of a compound verb) ; $\bar{\varepsilon}^{ʷ}$

Examples:

adugu + e: → adige: 'that which is asked'

vcʊcʊ + ɛ̄ʏ vcʊcɛ̄ʏ

adugu + te: → adigite: 'if asked'

vcʊcʊ + cɛ̄ʏ vcʊcʊcɛ̄ʏ

adugu + pettu → adigipettu 'please ask for (me)'

vcʊcʊ + cɛʏccv vcʊcʊcɛʏccv

Along with the above set of examples, I also give another set of compound verb forms with harmony, having $\varepsilon^{ʏ}$, $\bar{\varepsilon}^{ʏ}$ and $\bar{\varepsilon}^{ʷ}$ in the first syllable of the second word. These compound verbs differ in aspect, as shown in the brackets.

kaḍugu + ve:yu ⟶ kaḍigive:yu 'to wash' (completive)

CVCCᵘCᵘ + CɛʲCV CVCᵘCᵘCɛʲCV

kaḍugu + peṭṭu ⟶ kaḍigipeṭṭu 'to wash' (benefactive)

CVCᵘCᵘ + CɛʲCCV CVCᵘCᵘCɛʲCCV

aḍugu + ve:yu ⟶ aḍigive:yu 'to ask' (finally)

VCᵘCᵘ + CɛʲCV VCᵘCᵘCɛʲCV

aḍugu + peṭṭu ⟶ aḍigipeṭṭu 'to ask' (benefactive)

VCᵘCᵘ + CɛʲCCV VCᵘCᵘCɛʲCCV

ka:lu + po:vu ⟶ ka:lipo:vu 'to burn' (completive)

CV̄CCᵘ + CɛʷCV CV̄CᵘCɛʷCV

alugu + po:vu ⟶ aligipo:vu 'to get angry' (completive)

VCᵘCᵘ + CɛʷCV VCᵘCᵘCɛʷCV

5.3.2.3

Lowering Harmony - Change in V Grade

Verbal suffixes with $\bar{\varepsilon}^{y}$ exponent [e:] as in -le:du (past negative) and -le:nu (cannot - disability marker) induce lowering harmony, as illustrated in the examples that follow. The verb root is w prosodic and when followed by a suffix with e: which is y prosodic, $\bar{\varepsilon}^{y}$, the resultant harmonised form is also w prosodic. Thus we find no change in prosody but there is a change in V grade from ᵘ to ᵒ.

The structure to cover the examples is given below.

(c)VCCᵘCᵘ + CɛʲCV → (c)VCᵒCᵒCɛʲCV

aḍugu + le: du ⟶ aḍagale:du 'didn't ask'

aḍugu + le: nu ⟶ aḍagale:nu 'I cannot ask'

caduwu + le: du ⟶ cadawale:du 'didn't read'

caduwu + le: nu ⟶ cadawale:nu 'I cannot read'

-le:du is a negative form which is used both with nouns and verbs. When used with nouns -le:du does not induce harmony in the stems. For example,

caduwu + le: du ⟶ caduwule:du 'there is no education'

5.3.2.4

Lowering Harmony - Compound Verbs

A Suffixes with [a], α^{W}, induce lowering harmony in the verb root. An example is -kalanu, the suffix denoting 'ability'. The change in V grade which represents the lowering harmony is shown in the formulae below:

$(C)VC\underline{C}^{W}C(C)\underline{C}^{W} + C\alpha^{W}C\alpha^{W}CV \rightarrow (C)VC\alpha^{W}C(C)\alpha^{W}C\alpha^{W}C\alpha^{W}CV$

aḍugu + kalanu	⟶	aḍagakalanu	'I can ask'
caduwu + kalanu	⟶	cadawakalanu	'I can read'
kudurcu + kalanu	⟶	kudarcakalanu	'I can arrange'

The -kalanu suffix, however, has another alternant form in these cases in informal speech with voicing of the initial consonant of the suffix, viz. aḍagagalanu, cadawagalanu, and kudarcagalanu.

-aka is a non-finite suffix, which induces harmony in the verb root in the same way as shown for -kalanu, namely lowering harmony.

$(C)VC\underline{C}^{W}C\underline{C}^{W} + \alpha^{W}CV \longrightarrow (C)VC\alpha^{W}C\alpha^{W}CV$

caduwu + aka	⟶	cadawaka	'not reading'
aḍugu + aka	⟶	aḍagaka	'not asking'

The usual Sandhi applies, that is, when two vowels come together, the first is lost.

B Suffixes with [o], ε^{W}, also induce lowering harmony in the verb root. This type of suffix is generally found in compound verb formations where the second verb has [o], as in koṭṭu

$C\breve{V}C\underline{C}^{W} + C\varepsilon^{W}CCV \qquad C\breve{V}C\alpha^{W}C\varepsilon^{W}CCV$

ceḍu + koṭṭu	⟶	ceḍakoṭṭu	'to spoil'
paḍu + koṭṭu	⟶	paḍakoṭṭu	'to cause to fall'
ra:lu + koṭṭu	⟶	ra:lakoṭṭu	'to make fall'

5.3.2.5

Justification for Semantic Criteria

It is interesting to note that [e:], $\bar{\varepsilon}^{y}$, induces two different types of harmony, as shown in 5.3.2.2 and 5.3.2.3 above.

(i) Fronting harmony (with -e: and -te: suffixes)

(ii) Lowering harmony (with -le: du and -le: nu)

The use of semantic criteria may help to establish suffix function. Of the two types of harmony mentioned above (i) is found in non-negative forms whereas (ii) is strictly for negative forms.

Now let us consider suffixes where a:, $\bar{\alpha}^{w}$, induces lowering harmony exactly like suffixes with le:. The forms in 5.3.2.2 all have a positive meaning as they denote the ability of the speaker. This gives support to my proposal that different types of harmony can be related to semantic criteria.

5.3.2.6

Constraints on Disyllabic Roots

Suffixes with [a:], $\bar{[a:]}^{w}$, induce lowering harmony. However, this harmony is restricted to disyllabic forms. I take the suffix -ta: to illustrate this type of harmony.

Examples:

a:du + ta:du	⟶	a:data:du	'he plays'
$\bar{\alpha}^{w}$ C C^{w} + C$\bar{\alpha}^{w}$ C V		$\bar{\alpha}^{w}$ C α^{w} C $\bar{\alpha}^{w}$ C V	
ko:ru + ta:du	⟶	ko:rata:du	(i) 'he grates'
C$\bar{\varepsilon}^{w}$ C C^{w} + C$\bar{\alpha}^{w}$ C V		C$\bar{\varepsilon}^{w}$ C α^{w} C $\bar{\alpha}^{w}$ C V	(ii) 'he wishes for'

In certain disyllabic verb forms harmony with [a:] does not take place.

Examples:

$CV^{\breve{}}C(C)C^{\omega} + C\bar{\alpha}^{\omega}CV \qquad CV^{\breve{}}C(C)C^{\omega}C\bar{\alpha}^{\omega}CV$

vippu + ta:du	⟶	vipputa:du	'he unties'
gillu + ta:du	⟶	gilluta:du	'he pinches'
ce:du + ta:du	⟶	ce:du ta:du	'he draws (water from a well)'
gi:ru + ta:du	⟶	gi:ruta:du	'he cuts'

From the above examples it seems that only w prosodic disyllabic roots undergo harmony of this type with suffixal a:. The y - w prosodic disyllabic roots do not undergo harmony.

5.3.3.0

Grouping of Verb Suffixes

Verbal suffixes so far analysed can now be grouped as follows. I present the summary of my analysis in prosodic terms.

V grade and prosody of suffix syllable inducing harmony	Suffixes	Example
1 (i) $\underset{\alpha^{w}}{\breve{}}$ (lowering harmony)	-aka $\alpha^{w}C\alpha^{w}$	caduwu + aka ⟶ cadawaka 'without reading'
		$CVCC^{\omega}CC^{\omega} + \alpha^{\omega}CV \rightarrow CVC\alpha C^{\omega}C\alpha^{\omega}C\alpha^{\omega}$
	-kalanu $C\alpha^{\omega}C\alpha^{\omega}CC^{\omega}$	caduwu + kalanu ⟶ cadawakalanu 'I can read'
		$CVCC^{\omega}CC^{\omega} + C\alpha^{\omega}C\alpha^{\omega}CC^{\omega} \rightarrow CVC\alpha^{\omega}C\alpha^{\omega}C\alpha^{\omega}C\alpha^{\omega}$ $-CV$
	-ta: $C\bar{\alpha}^{w}$	a:du + ta:du ⟶ a:data:du 'he will play'
		$\bar{V}CC^{\omega} + C\bar{\alpha}C^{\omega}CV \qquad \bar{V}C\alpha^{\omega}C\bar{\alpha}^{\omega}CV$

(see 5.3.2.6 for other examples)

V grade and prosody of suffix syllable inducing harmony	Suffixes	Example
(ii) $\bar{\alpha}^{y}$ (fronting harmony)	-a: [ɑ:] , α^{y}	adugu + [ɑ:] + nu ⟶ adig[ɑ:]nu 'I asked'
		VCVCV + $\bar{\alpha}^{y}$ + CV → VCVC$\bar{\alpha}^{y}$CV
		(see 5.3.2.6 for other examples)
2. (i) $\bar{\varepsilon}^{y}$ (fronting harmony)	-e: $\bar{\varepsilon}^{y}$	adugu + e: ⟶ adige: (relative participle) of adugu 'to ask'
		VCVCV + $\bar{\varepsilon}^{y}$ → VCV^{y}C$\bar{\varepsilon}^{y}$
	-te: C$\bar{\varepsilon}^{y}$	adugu + te: ⟶ adigite: 'if ask'
		VCVCV + C$\bar{\varepsilon}^{y}$ → VCV^{y}CV^{y}C$\bar{\varepsilon}^{y}$
	-ve:yu C$\bar{\varepsilon}^{y}$CV	adugu + ve:yu → adigive:yu 'to ask' (completive)
		VCVCV + C$\bar{\varepsilon}^{y}$CV → VCV^{y}CV^{y}C$\bar{\varepsilon}^{y}$CV
	-pettu Cε^{y}CCV	adugu + pettu → adigipettu 'to ask on behalf of someone'
		VCVCV + Cε^{y}CCV → VCV^{y}CV^{y}Cε^{y}CCV
		(See 5.3.2.2 for other examples)
(ii) $\bar{\varepsilon}^{y}$ (lowering harmony)	when suffix C initial is [l]	
	suffixes -le:du, -le:nu	

Examples

adugu + le:du	⟶ adagale:du	'didn't ask'
adugu + le:ŋu	⟶ adagale:nu	'I cannot ask'
VCVCV + C$\bar{\varepsilon}^{y}$CV	VCα^{w}Cα^{w}C$\bar{\varepsilon}^{y}$CV	

Forms of this type of lowering harmony are common to all speakers. But some uneducated speakers of the coastal dialect have them without harmony. They are as follows:

adugu + le:du ⟶ adugule:du 'didn't ask'

adugu + le:nu ⟶ adugule:nu 'I cannot ask'

VCCCC + CĒCV VCCCCCĒCV

(iii) ɛ^w (lowering harmony) kottu CɛCCC

Examples

cedu + kottu ⟶ cedakottu 'to spoil'

CECC + CɛCCV CVCɑCɛCCV

(iv) Ē^w (fronting harmony) po:vu CĒCC

Example

ka:lu + po:vu ⟶ ka:lipo:vu 'to burn'

CV̄CC + CĒCV CV̄CCĒCV

(see 5.3.2.2 for further illustrations)

3 (i) C^y (fronting harmony) Suffixes:

-i C^y (past participle)

-ina Cɔ^w (past verbal adjective)

-ina: Cɔ̄^w (concessive)

Examples:

adugu + i ⟶ adigi 'having asked'

VCCCC + C VCCCC

adugu + ina ⟶ adigina 'the (so) asked'

VCCCC + CɔCV VCCCCCV

adugu + ina: ⟶ adigina: 'even if asked'

VCCCC + CɔC V̄ VCCCCC V̄

(see 5.3.2.1 for further examples)

5.3.3.1

Summary Statement

To summarise, we have following types of harmony induced by verbal suffixes.

Lowering:	$C^{w} > \alpha^{w}$	when harmony is induced by	$\bar{\varepsilon}^{y}$ ε^{w}
Fronting:	$C^{w} > C^{y}$	when harmony is induced by	C^{y}
Fronting:	$C^{w} > C^{y}$	when harmony is induced by	$\underset{\sim}{\varepsilon}^{y}$ $\bar{\varepsilon}^{w}$ α^{y}

Earlier scholars have not included so many vowels as inducing harmony. From my analysis, presented in the foregoing section, it is evident that vowels e, o and o: induce vowel harmony in the verb root. All three of them occur as root initial vowels of the second verb in a compound verb form. The first verb root undergoes the process of vowel harmony and the second verb induces the process. It is equally interesting to note that these three vowels, viz. e, o, o:, do not induce vowel harmony in any structures other than the first element of a compound verb.

In the case of nominal harmony apart from the plural suffix it is the noun form which directs the suffixes. In the case of plural suffix, it is observed that it functions like verb suffixes, i.e. induces harmony. In the case of verbs, the suffixes direct the roots. No amount of descriptive statements have brought this difference to light until this prosodic study was attempted.

5.4.0

Conclusions

To conclude I present the following general rules for vowel harmony in Telugu.

1 Nominal suffixes of the structure -CV (with the exception of the plural suffix) undergo harmony. This is what Aoki (1968) recognises as progressive directionality - stem determined harmony.

2 Plural suffix - CC^{W} (or to be more precise - LC^{W}) is a harmony inducing suffix.

3 Monosyllabic or disyllabic verbal suffixes and the second verb initial syllables of compound verbs induce harmony in the first verb root. This is suffix determined harmony and can be considered as regressive harmony.

CHAPTER SIX

SANDHI

6.0.1

Definition and Types of Sandhi

The word Sandhi is basically of Sanskrit origin, and it originally had the meaning 'putting together, joining'. Sandhi was first adopted into general linguistics parlance by George von der Gabelentz as early as 1891. Since then the term has been used to cover descriptions of phenomena which deal with junctures between segments, variations, and alternations at the boundaries of constituents. In other words, the term Sandhi covers interfaces between phonetics and phonology and between phonology and morphology. At a later period, the term Sandhi was used as a general term for covering several phenomena which otherwise individually require more specific nomenclature. Bloomfield (1935:186, fn.1) introduces the term in a similar fashion. 'Sandhi' is a cover-term for many divergent phenomena which include assimilations or dissimilations, allomorphic or morphophonemic alternations, atonic and proclitic forms of different types and such others. It has been observed by many scholars that 'sandhi' comes into existence in order to bring in 'ease of articulation' and/or 'euphony'.

That 'Sandhi', as a term in linguistic parlance, is used in a very broad sense is evident from Bloomfield's definition of the same. He defines Sandhi as 'features of modulation and phonetic modification...in many syntactic constructions' (1935:186), and to support his definition gives divergent examples. A similar broad definition is made by David Crystal in his A First Dictionary of Linguistics and Phonetics (1980:311). He defines Sandhi as follows (capitalisation is in the original):

> [a] term used in SYNTAX and MORPHOLOGY, to refer to the PHONOLOGICAL MODIFICATION of GRAMMATICAL FORMS which have been juxtaposed. ASSIMILATION and DISSIMILATION are two widespread tendencies which could be classified under this heading. The merit of the Sandhi notion is that it can be used as a very general term within which can be placed a wide range of structural tendencies that otherwise it would be difficult to inter-relate.

W.S. Allen (1972:5) observes that the very generality of the Sandhi notion in linguistics is a disadvantage rather than a 'merit'. He notes that 'factual simplicity has been achieved at the price of conceptual confusion'. It is necessary to achieve conceptual clarity, and this can be achieved by delimiting various types of Sandhi phenomena.

6.1.0

Survey of Sandhi Studies in Telugu

In addition to the traditional grammarians, several scholars have studied Sandhi in the Telugu language. I present a brief survey of their work, and subjecct the same to critical analysis.

Sandhi has been described as a class of alternations which occurs among the phonemes of two or more morphs in close juncture or saṁhita. The traditional school of Sanskrit grammarians gives the meaning of saṁhita as 'varṇānām ati śayitaḥ sannidhiḥ saṁhitā - saṁjñaḥ syāt', which roughly means that the closest possible proximity between phonemes is saṁhitā. (The concept of phoneme is, however, modern.)

6.1.1

Sandhi as Described by Krishnamurti

Vocalic Sandhi is recognised by Krishnamurti (1957) as an automatic phenomenon in modern Telugu. The general phonetic constraint that two

vowels cannot occur in succession within the same morpheme is the point of departure for his description. If they occur in open juncture, Sandhi cannot take place. Vocalic Sandhi thus is only possible in close juncture.

The data considered by Krishnamurti are as follows; I have retained his transcription in the examples.[1]

$V_1 + V_2 \rightarrow V_2$		(v = short vowel)
i + e → e	adi+ekkaḍa → aḍekkaḍa	'where is it?'
i + a → a	pani + ayindi → panayindi	'work is complete'
e + i → a	ginne + ikka(llē:du) → ginnikkallē:du	'vessel is not here'
a + i → i	a:yana + ikkallē:du → a:yanikkallē:du	'he is not here'
u + e → e	illu + ekkaḍa → illekkaḍa	'where is the house?'
u + o → o	atanu + okkaḍe: → atanokkaḍe:	'he alone'

Krishnamurti cites these forms and treats the phenomenon as an automatic alternation without exception, He has not, however, considered possible phonetic cues.

Krishnamurti considers two other types of alternation which are non-automatic, but which cover a wide area of vowel Sandhi in modern spoken Telugu. In the first type of alternation he considers those forms where 'in a sequence of more than two syllables in close juncture, the vowel of the second syllable is assimilated in quality to that of the following syllable' (ibid.:187). He gives the examples of the following kind:

uCĭ ~ iCĭ	kalus 'to meet'		
	-i past morpheme	kalisi	'having met'
uCĕ ~ iCĕ	kalus-		
	-e non-tense adj.suffix	kalisē	adj. 'meeting'

1. Krishnamurti puts the vowel after Sandhi in italics, probably to mark it without reference to its quality. I have underlined the same for convenience in typing.

Krishnamurti observes that the alternations of the above type operate without exceptions in the verb class.

In the second type Krishnamurti considers those forms where final /i/ of a member of the N (noun) class alternates with /u/ before the plural morpheme -lu. For example:

gadi	'room'	+ -lu plural suffix.		gadulu	'rooms'
katti	'knife'			kattulu	'knives'

It may be observed that Krishnamurti while discussing the first type of alternation, takes syllable structures into account, whereas while discussing the second type of alternation he deals with phonemes.

Both these types of alternation given above are considered in detail by me under vowel harmony. I am of the opinion that Sandhi is not the proper place to discuss such harmonic processes.

Krishnamurti (1957:178-88) discusses consonantal Sandhi in modern Telugu.

In a sequence $(V)C_1\breve{V}C_2(V)$, V can have another alternant in $\emptyset$. This $\breve{V}$ ($\sim \emptyset$) is a marker of morpheme boundary, In other words, $\breve{V}$ may be part of the preceding morpheme or following morpheme, or may be a morpheme by itself. The $\breve{V}$ represents any of the short vowels i, a and u. It is rare to find e in this position. The loss of vowel between C_1 and C_2 is considered as Sandhi between C_1 and C_2. I present here Krishnamurti's analysis. He has, however, not made any descriptive statement about the Sandhi, but presents his analysis through examples. The data are given in four sets.[2]

I. $C_1\breve{V}C_2 \sim C_1C_2$

a)	ṭ$\breve{V}$r ~ ṭr	ma:ṭa + ra:du	--> ma:ṭra:du	'a word does not come out of mouth'
	ḍ$\breve{V}$r ~ ḍr	to:ḍi + ra:gam	--> to:ḍra:gam	'a raga called todi'

2. Krishnamurti did not explain anything about the possible types of C_1 and C_2.

b) pV̈m ~ pm kaḍupu + maṇṭa –> kaḍupmaṇṭa 'burning of stomach' (due either to hunger or jealousy)

bV̈m ~ bm gula:bi + mogga –> gula:bmogga 'rosebud'

c) nV̈t ~ nt da:ni + to: + e:mpani –> da:nto:e:mpani? 'what is the business with that?'

nV̈d ~ nd iccina + da:nto: –> iccinda:nto: 'with what has been given'

nV̈j ~ nj wini + jarugu –> winjarugu 'hear and then move'

nV̈r ~ nr mana + ra:muḍu –> manra:muḍu 'our Rama'

nV̈l ~ nl wina + le:du –> winle:du 'didn't listen'

d) rV̈n ~ rn wa:ri + ne: + cu:sænu –> wa:rne:cu:sænu 'I saw him' (honorific)

rV̈l ~ rl ma:ra + le:du –> ma:rle:du 'it hasn't changed'

e) lV̈t ~ lt ka:li + to + tannæḍu –> ka:lto:tannæḍu 'he kicked with the leg'

lV̈d ~ ld ka:lu + du –> ka:ldu 'it won't burn'

lV̈c ~ lc pala + cembu –> pa:lcembu 'a milk container'

lV̈j ~ lj ga:jula + jata –> ga:juljata 'a pair of bangles'

lV̈n ~ ln ma:ṭalu + na:kenduku? –> ma:ṭalna:kenduku? 'why these words (me/for)?'

lV̈r ~ lr pa:la + ra:yi –> pa:lra:yi 'a marble stone'

II. $C_1CV \sim C_1C_3$ or C_3C_2 (loss of intervening vowel and extension of retroflection if one of the consonants across Sandhi is a retroflex).

C_3 is the resulting form from partial assimilation to C_1 or C_2. Krishnamurti labels this as componential assimilation, i.e., some phonetic component of one phoneme is assimilated to some component of the adjacent phoneme.

a) ṭV̈n ~ ṭṇ pa:ṭa + na:ku + ra:du –> pa:ṭṇa:kura:du 'I do not know the song'

ṭV̈l ~ ṭḷ ma:ṭa + lu –> ma:ṭḷu 'words'

b) nV̈ṭ ~ ṇṭ win + aṭam –> wiṇṭam 'hearing' (vb.n.)

nV̈ḍ ~ ṇḍ nu:ne + ḍabba: –> nu:ṇḍabba: 'oil tin'

c) lV̆t ~ ɭt ca:l + aṭam → ca:ɭṭam 'being sufficient' (vb.n.)

lV̆d ~ ɭḍ ca:l + aḍam → ca:ɭḍam 'being sufficient' (vb.n. in other dialect)

Krishnamurti states that the alternation of n,l with ṇ, ɭ is through their assimilation to the retroflex phonemes in the preceding or following position.

III. $C_1\breve{V}C_2 \sim C_2C_2$ (C_1 assimilates to C_2 across Sandhi).

1. Stops

a) Velar Series

kV̆k ~ kk peruku + ko: → perukko: 'pull it yourself'

gV̆k ~ kk aḍugu + ko: → aḍukko: 'go begging'

gV̆g ~ gg tarugu + ga: + undi → tarugga:undi 'it is deficient'

kV̆g ~ gg ceruku + gaḍa → ceruggaḍa 'sugar cana'

b) Palatal Series

cV̆c ~ cc cu:ci + ceppu → cu:cceppu 'look and tell'

jV̆c ~ cc ja:ji + cettu → ja:ccettu 'jasmine stree'

jV̆j ~ jj ga:ju + ja:ḍi → ga:jja:ḍi 'glass jar'

cV̆j ~ jj cuci + jaḍisi + po:yina:ḍu → cu:jjaḍisi po:yina:ḍu 'seeing it, he got scared'

c) Dental Series

tV̆t ~ tt pa:ta + talupu → pa:ttalupu 'old door'

dV̆t ~ tt ge:de + tannindi → ge:ttannindi 'the buffalo kicked' (while milking)

dV̆d ~ dd su:di + de:niki → su:dde:niki 'why [do you need] a needle?'

tV̆d ~ dd pa:ta + da:raṃ → pa:dda:ram 'old thread'

Dental and Palatal

tV̈c ~ cc	pa:ta + ceppu → pa:cceppu	'old sandal'
dV̈c ~ cc	ge:de + carmam → ge:ccærmam	'buffalo skin'
tV̈j ~ jj	ra:ti + ja:ḍi: → ra:jja:ḍi	'stone jar'
dV̈j ~ jj	le:du + jalubu → le:jjalubu	'no cold'

d) Retroflex Series

ṭV̈ṭ ~ ṭṭ	na:ṭ + aṭam → na:ṭṭam	'planting' (vb.n.)
ḍV̈ṭ ~ ṭṭ	pa:ḍ + aṭam → pa:ṭṭam	'singing' (vb.n.)
ḍV̈ḍ ~ ḍḍ	pa:ḍ + aḍam → pa:ḍḍam	'singing' (vb.n.) (in another dialect)
ṭV̈ḍ ~ ḍḍ	na:ṭ + aḍam → na:ḍḍam	'planting' (in another dialect'

e) Labial Series

pV̈p ~ pp	ko:pa + paḍḍa:ḍu → ko:ppaḍḍa:ḍu	'he fretted in anger'
bV̈p ~ pp	jalubu + paṭṭindi → jaluppaṭṭindi	'[one] caught cold'
bV̈b ~ bb	je:bu + baruwayindi → je:bbaruwayindi	'the pocket became heavy'
pV̈b ~ bb	na:pa + baṇḍa → na;bbaṇḍa	'a stone slab'

Krishnamurti observes that the occurrence of sequences where both C_1 and C_2 are aspirated stops is generally rare in Telugu. If any one of them is aspirated, then in Sandhi the following principle applies: if C_2 is an aspirated stop, C_1 is assimilated to C_2 in the matter of voicing, devoicing and palatalisation.

kV̈gh ggh	oka + ghaṇṭa + ayindi → ogghaṇṭayindi	'one hour has passed'
dV̈ch cch	e:di + cha;rji: ḍabbu → e:ccha:rji:ḍabbu	'where is the money for fare?'

If C_1 is an aspirated voiced stop and C_2 is unaspirated, C_1 loses its aspiration and alternates with the corresponding unaspirated voiced stop as in the following examples:

dh$\overset{\vee}{}$t ~ dt kadha + telisindi → kadtelisindi
'the story is known to me'

dh$\overset{\vee}{}$c ~ dc ba:dha + ca:la:taggindi → ba:dca:la:taggindi
'the pain has subsided a good deal'

IV. Krishnamurti also examines cases where both C_1 and C_2 are identical phonemes of the sonorant group, i.e., nasal, lateral, trill, semivowel and sibilants. As there is no assimilation involved, he considers that the resultant forms may be represented as $C\ C$ or $C\ C$.
$1\ 1$ $2\ 2$

a) Nasals

n$\overset{\vee}{}$n ~ nn win + a+ nu → winnu 'I won't hear'

m$\overset{\vee}{}$m ~ mm pa:mu + mi:da → pa:mmi:da 'on the serpent'

b) Lateral

($\overset{\vee}{}$)l$\overset{\vee}{}$l ~ ll nela + lu → nellu 'months'

c) Trill

r$\overset{\vee}{}$r ~ rr wa:ru + ra:le:du → wa:rra:le:du 'he nasn't come'

d) Semi-vowel

w$\overset{\vee}{}$w ~ ww ba:wa + weḷḷædu → ba:wweḷḷædu 'the brother-in-law has left'

e) Sibilant

s$\overset{\vee}{}$s ~ ss cu:si + sariga:ceppu → cu:ssariga:ceppu
'look in and say clearly'

V. In addition to the above-mentioned cases of Sandhi, Krishnamurti deals with another type which involves mutual componential assimilation among the phonemes involved.

$C_1\ \overset{\vee}{V}\ C_2 \sim C_3 C_3$

Both C_1 and C_2 simultaneously assimilate to each other, and as a result a new phoneme with the components of both C_1 and C_2 comes into existence. It may be seen in the following cases:

a) ḍ∨n ~ ṇṇ pa:ḍ + a + nu → pa:ṇṇu 'I won't sing'
mu:ḍu + nellu → mu:ṇṇellu 'three months'

b) ḍ∨l ~ ḷḷ cu:ḍ + a + le:du → cu:ḷḷe:du 'hasn't seen'
wa:ḍu + le:ḍu → wa:ḷḷe:ḍu 'he is not there'

6.1.2

Critical Review of Krishnamurti's Sandhi Rules

Attention was drawn to the fact that scholars noted that there is a general phonetic constraint that two vowels cannot occur in succession within the same morpheme. When two vowels come together in close juncture within the same morpheme, vocalic Sandhi takes place and the first vowel is lost. This rule was given by Krishnamurti (ibid.:178).

This particular statement of Krishnamurti needs modification. The phonetic constraint is not simply that two vowels cannot occur in succession, but that two stressed vowels cannot occur in succession within the same morpheme. It is a fact that two successive syllables with equal primary stress do not occur. Vocalic Sandhi in close juncture is only possible when the syllable preceding the juncture is unstressed and the syllable following the juncture is stressed. It is the unstressed syllable nucleus that is lost in Sandhi. This may be represented as follows:

$$\text{'}(V)C_1V_1C_2V_2 + \text{'}V_3C_3V_4C_4V_5 \rightarrow \text{'}(V)C_1V_1C_2V_3C_3V_4C_4C_5V$$

Examples:

'pani + 'ayindi → 'panayindi 'work is done'

'a:yana + 'ikkaḷḷe:ḍu → 'a:yanikkaḷḷe:ḍu 'he is not here'

In the case of words where the final syllable bears secondary stress (which is realised as a long vowel) this vocalic Sandhi will not take place.

Observe the following examples:

'pe:ci: + 'ayindi → 'pe:ci:ayindi 'there was a tussle'

'gula:bi: + 'mogga → 'gula:bi:mogga 'rosebud'.[3]

These examples illustrate that stress plays an important role in vocalic Sandhi. The function of stress has not previously been noted by those describing vocalic Sandhi in Telugu.

Krishnamurti (1957) gives some rules for consonantal Sandhi which have already been considered by me in Section 6.1.1. He states that the loss of vowel between C_1 and C_2 ($-V- \rightarrow O/$) is considered as Sandhi between C_1 and C_2. His classes are reformulated in order to make his representation clearer. His representations are given in footnote 4.

I. $-C_1V + C_2- \rightarrow -C_1C_2-$

II. $-C_1V + C_2- \rightarrow -C_1C_3$ or $-C_3C_2-$ — C_3 is a resultant form of componential assimilation.

III. $-C_1V + C_2- \rightarrow -C_2C_2-$

IV. $-C_1V + C_2- \rightarrow -C_3C_3-$

V. $-C_1V\ C_1 \rightarrow -C_1C_1$

In Group I he has subclasses consisting of the following consonant sequences:

a) $-t\breve{V} + r- \rightarrow -tr-$
$-d\breve{V} + r- \rightarrow -dr-$

b) $-p\breve{V} + m- \rightarrow -pm-$
$-b\breve{V} + m- \rightarrow -bm-$

---

3. Compare this example with that of Set I(b) suggested by Krishnamurti. Dialect variations are the reason for this.
4. Krishnamurti represents them as: (i) $C_1\breve{V}C_2 \sim C_1C_2$; (ii) $C_1\breve{V}C_2 \sim C_1C_3$ or C_3C_2; (iii) $C_1\breve{V}C_2 \sim C_2C_2$; (iv) $C_1\breve{V}C_2 \sim C_3C_3$, and (v) $C_1\breve{V}C_2 \sim C_3C_3$

c) -nV̆ + t- --> -nt-
-nV̆ + d- --> -nd-
-nV̆ + j- --> -nj-
-nV̆ + r- --> -nr-
-nV̆ + l- --> -nl-

d) -rV̆ + n- --> -ṉn-
-rV̆ + l- --> -rl-

e) -lV̆ + t- --> -lt-
-lV̆ + d- --> -ld-
-lV̆ + c- --> -lc-
-lV̆ + j- --> -lj-
-lV̆ + n- --> -ln-
-lV̆ + r- --> -lr-

Krishnamurti claims that these clusters result from Sandhi and are present in modern colloquial standard Telugu. My data show that there are restrictions on the occurrence of these clusters. Consonant clusters of all the types mentioned above are possible in educated speech of the Coastal dialect. In uneducated speech of the Coastal area, this type of Sandhi is less common. Of the five types cited by Krishnamurti (c), (d), and (b) are common in that order in uneducated speech. I have no evidence of the rest, viz., (a) and (e) in my data. In the Telangana dialect only (c) is common in both educated and uneducated speech.

Rayalaseema speech has (c), (d), (e) types of clusters. One interesting feature to note is that in all the speech styles where these Sandhi forms are present in normal speech, the following constraints are observed.

In Krishnamurti's Group I, $C_1\breve{V} + C_2$-, when $\breve{V}$ is a close vowel (either front or back), it deletion is very frequent in educated speech and in uneducated speech. If $\breve{V}$ is an open vowel [a], its deletion is not possible in case of uneducated speech. Even in fast speech, uneducated speakers try to preserve this as a reduced vowel [ə] or [ɯ].

However, in place of Krishnamurti's five consonantal Sandhi rules, I propose a single rule. All his cases can be accommodated under the single word-initial main stress rule suggested by me in the stress syllable section of this thesis (cf. 3.2.2), that is, when two words or morphemes come together and the initial Syllable of the second word or morpheme is stressed, the unstressed syllable nucleus of the preceding word or morpheme is deleted.

'Vini + 'jarugu —> 'vinjarugu' - 'here and then move'.

Said in isolation, the utterance is realised as ['vinijarugu], but in connected speech or fast speech, the second syllable nucleus is lost, and this results in a new consonantal cluster, or preferably, consonant junction, in the system. The original stressed position of [j] and the resulting consonant junction [nj] contribute to the fact that the syllable derived will bear the secondary stress. Then the next syllable nucleus is weak as per the rule. Thus we get,

'Vini'jarugu —> 'vinjarugu —> 'vinjargu.

Krishnamurti's Group II involve componential assimilation forms. This is no exception to my word-initial stress rule, as cited above. Under this class he has three subclasses.

a) $t\check{V}$ + n---> -tn-
   $t\check{V}$ + l- —> -tl-

b) $-n\check{V}$ + t- —> -nt-
   $-n\check{V}$ + ɖ- —> -nɖ-

c) $-l\check{V}$ + t- —> -lt-
   $-l\check{V}$ + ɖ- —> -lɖ-

In subclass (a) the alternation is $-C_1\check{V} + C_2 \rightarrow -C_1C_3-$. In the remaining two subclasses it is $-C_1\check{V} + C_2- \rightarrow - C_3C_2-$. He has not suggested why such a process takes place. It is interesting to note that when C_1 is a retroflex ʈ, its identity is not lost in the componential assimilation. We will consider this point in the later parts of this thesis (cf. 6.2.2).

In Group III Krishnamurti considers the forms with $-C_1\breve{V} + C_2 \rightarrow -C_2C_2-$. Under this class he classifies all stops, viz., velar, palatal, dental, retroflex and labial. I do not venture to go into all the details, but would like to draw attention to the following examples in each group.

-kv̆ + k → -kk-	-cv̆ + c → -cc-
-kv̆ + g → -kk-	-jv̆ + c → -cc-
-gv̆ + g → -gg-	-jv̆ + j → -jj-
-kv̆ + g → -gg-	-cv̆ + j → -jj-
-tv̆ + t → -tt-	-tv̆ + c- → -cc-
-dv̆ + t → -tt-	-dv̆ + c- → -cc-
-dv̆ + d → -dd-	-tv̆ + j- → -jj-
-tv̆ + d → -dd-	-dv̆ + j → -jj-
-ṭv̆ + ṭ → -ṭṭ-	-pv̆ + p → -pp-
-ḍv̆ + ṭ → -ṭṭ-	-bv̆ + p → -pp-
-ḍv̆ + ḍ → -ḍḍ-	-bv̆ + b → -bb-
-ṭv̆ + ḍ → -ḍḍ-	-pv̆ + b → -bb-

(For more details see Section 6.1.1.)

From the above data it is clear that when the vowel is deleted between two similar consonants, geminates result. This offers no problem. Between two consonants that differ only in voice, i.e., one a voiced and the other a voiceless or vice versa, the resulting geminates are predictable, but Krishnamurti does not make this generalisation. There is no difficulty in explaining the resultant patterns. When $-C_1\breve{V} + C_1 \rightarrow -C_1C_1$ where C_1 is voiceless or voiced, the resulting geminate is the same, so there is no problem. The problem comes when $-C_1V + C_2- \rightarrow -C_2C_2-$ where C_1 and C_2 differ in voicing.

My explanation for this again is that of the word-initial main stress rule of Telugu. Whether it is a voiceless or voiced consonant, the consonant in the word-initial stressed syllable position (i.e., of the second word) will prevail over the consonant in the word-final unstressed syllable (i.e., of the first word). The syllable nucleus of the preceding word-final unstressed syllable is lost and the consonant undergoes Sandhi in accordance with the rules given, i.e., if C_1 is voiced and C_2 is voiceless, both consonants will be voiceless; if C_1 is voiceless and C_2 is voiced, both consonants will be voiced. Prosodic relations of $\breve{V}$ and $\underline{\breve{V}}$ systems further support this statement (see Section 6.2.3).

Krishnamurti's Group IV involved $-C_1\breve{V} + C_2 \rightarrow - C_3C_3$. This he calls a type of mutual componential assimilation. His Group V considers $-C_1\breve{V} + C_1- \rightarrow - C_1C_1-$. Under this group he includes forms with identical consonants of the sonorant group, i.e., nasal, lateral, trill, semivowel and sibilants. He also cites aspirated stops and their participation in Sandhi (cf.6.1.1); $-C_1\breve{V} + {}^{h}C_2- \rightarrow -C_2{}^{h}C_2-$. These examples and observations make an unecessary contribution towards confusion. They can all be covered by the main stress rule of the word-initial syllable in Telugu, plus a few simple rules as proposed by me.

6.1.3

Kelley's Work

Kelley (1963) describes the vowel system of Telugu and establishes a set of rules for external vocalic Sandhi. External vocalic Sandhi for him is that type of phenomenon which occurs across /+/ juncture. Internal Sandhi, he defines as automatic alternation within a macrosegment.

Kelley's approach differs from that of Krishnamurti (1957), who restricts his vocalic Sandhi treatment only to cases where base forms with -CV (before microjunctures) have consonantal final alternants (cf. 6.1.1). Kelley, however, recognises that post-junctural alternants and the phonemic problems arising from Sandhi both need to be considered. The phonemic problems that he cites are (i) contrasts in limited environments, and (ii) stringent limitations on the distribution of phonemes within utterances. Both these problems, according to Kelley, essentially belong to the nature of vowel harmony.

Kelley illustrates with some examples how difficult it is to explain limitations on the distribution of vowel phonemes within utterances. The following monomorphemic minimum free forms are cited by him (1963:68).

1. [gʊ:ɖa] 'basket'
2. [gu:ɖu] 'nest'

In the above examples [ʊ] lower-high vowel occurs in the syllable preceding a low back vowel [ɑ]. [u:] high back vowel occurs in the syllable that precedes a high back vowel [u]. When the plural suffix -lu is added to these words, the following forms result:

3. [gʊ:ɭlu] 'baskets' [gʊ:ɖa + lu]
4. [gu:ɭu] 'nests' [gu:ɖu + lu]

This set thus provides a contrast. Kelley also cites some other examples of the same type.

5. [kəmpu] 'smell'
6. [kɑmpɑ] 'branch'
7. [kəmpa:] 'is it a smell?'
8. [kɑmpɑ:] 'is it a branch?'

9. [gɔ:ɭɭu] 'fingernails'

10. [gɔ:ɭɭʊ] 'walls'

11. [go:r + undi] 'there is a fingernail'

12. [gɔ:ɖ + ʊndI] 'there is a wall'.

In Example 7 above, the base form is [kəmpu]. When the interrogative suffix -a: [a:] is added to the base form, we get the form [kəmpa:]. Because the first vowel is low (and central) there is no change. But in Examples 9 and 11 [o:] occurs in the environment of a high back vowel, but the base form is [gɔ:ɖa].

Kelley draws our attention to the following:[5]

9a. go:ru + lu —> [go:ɭɭu] 'fingernails'

10a. gɔ:ɖa + lu —> [gɔ:ɭɭu] 'walls'

11a. go:ru + undi —> [go;rundi] 'there is a fingernail'

12a. gɔ:ɖa + undI —> [gɔ:ɖʊndI] 'there is a wall'.

Obviously the distribution of vowel phonemes is constrained by the presence of a high, low or central vowel in the following syllable.

Taking into consideration the above and such other cases, one may have to describe the distribution of vowels in the inventory as necessarily limited to harmonic sets. Hence Kelley prefers to abstract a component 'lower and more central' feature as /ʌ/ and states that the domain of the feature extends over more than one syllable. Once the component is recognised, there is every possibility to represent Examples 3 and 4, as follows:

3a. [gʌ̂:ɭɭu] 'baskets'

4a. [gu:ɭɭu] 'nests'.

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5. Kelley has not given the morphemic division. I have shown it in order to explain the limitations on the distribution of vowel phonemes.

By adopting the component /^/, vowel harmony can be attributed to the presence or absence of this phoneme in a given syllable. This, Kelley argues, avoids the complex statement of limitation of distribution for vowel phonemes.

The second problem that Kelley cites is that of contrasts in limited environments. Taking the examples:

13. [pa:ɖu] 'top soil'

14. [pa:ɖi] 'dairy product'

15. [undi] 'there is'

he looks at the contrasts when [pa:ɖu] and [pa:ɖi] are combined with [undi].

16. (pa:ɖ + undi] 'there is topsoil'

17. [pa:ɖ + ündi] 'there is a dairy product'.

These examples show a contrast between back and front rounded vowels. Kelley illustrates some examples in which front rounded vowels also occur in utterance-initial syllables after /y/, for instance:

18. [i^üddham] 'battle'

This form also exhibits a microsegment[6] initial front rounded vowel.

19. [mənči] 'good'

20. [mənč + üddham] 'a good battle'

A low front vowel may occur in initial syllables after /y/ and also initially in microsegments.

21. [i^ætnɖm] 'effort'

22. [mənč + ætnɑm] 'a laudable effort'

23. [wa:ɳɳi] 'him'

24. [əɖugu] 'ask]

25 [wa:ɳɳ + æɖugu] 'ask him'

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6. For 'Microsegments' see C.F. Hockett, A Course in Modern Linguistics (1958).

If the vowels in the above environments are considered as standing in contrast to each other, then one may have to give phonemic rules for a limited environment. Instead, Kelley prefers to give a solution to extend the domain of the component 'front' to the phoneme /y/.

> /y/ in /yu, yo, yâ/ initially in a microsegment is 'front' throughout the vowel.
>
> /y/ elsewhere in /yu, yo, yâ/ is glide plus the component 'front', occuring throughout the vowel.

By applying this rule, we can now rewrite Examples 16, 17, 20, 22, and 25 as follows:

16a. /paːḍ + undi/ 'there is topsoil'

17a. /paːḍ + yundi/ 'there is a dairy product'

20a. /manč + yuddham/ 'a good battle'

22a. /manč + yâtnam/ 'a laudable effort'

25a. /waːṇṇ + yâḍugu/ 'ask him'

With these examples Kelley establishes that some words have a different phonemic form depending on the phonemic form of the word that precedes. Kelley then proposes a vowel and co-vowel phoneme inventory for Telugu.

Vowel Phonemes		Co-vowel Phonemes	
i	u	/ʌ/	'qualifier'
e	a o	/ː/	'length'

Co-vowel for him is an extended usage of the term which was originally suggested by C.F. Hockett (1955:242).[7] Kelley observes that there may be some affinity to prosodic features also. /ʌ/ is not a segmental phoneme, but it is proposed for reasons of its utility. Kelley clearly states that

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7. C.F. Hockett, Manual of Phonology (1955), p.242.

a purely segmental approach to the analysis of the vowel phonemes of Telugu may not be 'the most efficient'. He quotes Z.S. Harris (1944:187),

> Components which resolve major distributional limitations...can easily be abstracted and written among the segmental phonemes. Such components are especially worth extracting if many morphophonemic statements are thereby eliminated.

Kelley gives the functions of /ʌ/ as follows:

1. Lowering and centralising co-occurrent /i(:), e(:), u(:), o(:)/ lowering and backing co-occurrent /a(:)/.
2. Lowering and centralising all succeeding /I, ʊ/ unless /:/ occurs. An occurrence of /:/ limits the domain of /ʌ/ to the syllable preceding its occurrence, except as provided in 3, 4, and 5 conditions.
3. Lowering all succeeding /a/.
4. Lowering and backing an immediately succeeding /a:/.
5. Lowering and centralising a succeeding microsegment initial /i:-/, /u:-/. In very rapid speech, /e: /. /0: / in this distribution may also be within its domain.
6. If /y/ immediately precedes /a, a:/, the allophone of /ʌ/ is simply 'low', and only Condition 2 is applicable.

After formulating the above rules, Kelley provides a good list of examples, a selection of which is given below.

27. [Iwwa + le:du] /îwwa + le;du/ 'didn't give' Conditions 1, 3

28. [ɪɖata] /ûɖata/ 'squirrel' Conditions 1, 3

29. [tɔɖaga + le:du] /tôɖaga + le:du/ 'didn't wear' Conditions 1, 3

30. [ƥI:ʈlʊ] /ƥî:ʈlu/ 'stools' Conditions 1, 2

31. [ʊ:pa + le:du] /û:pa + le:du/ 'didn't swing'
Conditions 1, 2

32. [pEdd + EgʊmatI] /pêdd + egumati/ 'a big export'
Conditions 1, 2, 3

34. [kampə:] /kâmpa:/ 'is it a branch?
Conditions 1, 4

35. [pɪll + ʊ:gutundi] /pill +u:gutundi' 'The girl will swing'
Conditions 1, 5

36. [pɪll + I:dutundi] /pill + i:dutundi/ 'The girl will swim'
Conditions 1, 5

37. [bəɳɖ + ænta] /baɳɖ + yânta/ 'the whole cart'
Condition 6

Kelley states that all possible combinations of vowel-co-vowel in medial position occur without any restriction, but there are limitations for their distribution in initial and final positions.

Kelley also treats external vocalic Sandhi. He gives the following rules with examples, as reproduced here.

External Vocalic Sandhi Rules

Symbols

//	morphophonemic writing
I	any high or mid front vowel ± co-vowels
ʊ	any high or mid back vowel ± co-vowels
A	any of the set /a, â, a:, â:/
E	any mid front vowel ± co-vowels
C	any consonant
S	any of the set/y, w/
V	any vowel (superscribed numbers indicate distribution)
–>	'Application of the rule yields', or simply 'yields'.

Examples:

1.0 sequences of //-CV + (S)V(:) - //

1.1 //-Ci//before//+wʊ +ʊ-, + A-//—>//-Ci + yʊ-,

Ci + yâ(:)-//members of //ʊ// are invariant (twelve pairs)

1.2 //-Ci, -Ca// before //; yʊ -, +yA-// —> //-Ci + yʊ-,

-ci + yâ(:)-// //-Ca + yʊ-, -Ca + yâ(:)-// members of

//ʊ// are invariant (six pairs attested).

1.3 Except where //-CV + SV-// has resulted from the application

of 1, 1, 1, 2, //-CV// before //yI-∼I- + wʊ- ∼ -ʊ+ A-// —>

//-CV+ I-, -CV +ʊ-, -CV + A-//. Members of //I, ʊ, A//

are invariant, except as provided in 1.4 (eighty-eight pairs).

1.4 When //-CV// is //-Cê// before //+ i(:), + u(:)-, + o-//,

—> //-ce + î(:)-, -Ce + û(:):, -Ce + ô-// (five pairs) when

//-CV// is //-Ce. -Cê// before //A// —> //-Ce + ê(:)-//

(eight pairs).

1.5 //-CV^1// before //+ V^2-, +yʊ, +yA-// —>//-C + V^2-,

-C + yʊ-, -C + yA-// (106 pairs).

2.0 sequences of //-CV: + (S)V(:)-//

2.1 When //-CV:// is //-Ci:, -Cu:, -o:, -Cê:// before

//+ yE- ∼ E-// —> //-CV: + yE-// (sixteen pairs).

2.2 When //-CV:// is //-Cê:. -Ca:// before //+ wʊ- ∼ ʊ-

(except //wo: ∼ -o:-//) //—>//-CV: + wʊ-// (thirteen pairs).

2.3 When //-CV:// is //-Cê:// before //+ A-// —> //-Cê: +yê:-//

(four pairs).

2.4 When //-CV// is any /V:/ before //+ wô:- ∼ ô:-// —>

//-CV: + wô:-// (six pairs).

2.5 When //-CV:// is //-Ci:// before //-+yî:- ∼ î:-// —>

//-Ci: + yî:- ∼ - Ci: + î:-// (one pair).

2.6 All other //-CV:// before all other //+ yI- ~ I-, + wʊ- ~ ʊ-, + A-// —> //-CV: + I-. -CV: +ʊ -. -CV: +A//.

The members of //I, ʊ , A// are invariant (seventy-five pairs).

Kelley after postulating the above rules, provides the following examples for external vocalic Sandhi. The rule applicable is indicated by the example.

Sequences of //-CV + (S)V (:)-//

//i + wu://: //puli + wundi// —> //puli + yundi// (1.1)
—> //pul + yundi// (1.5) [pul+ ündi] 'there is a tiger'

//i + wû//: //idi + wu:ru// —> //idi + yu:ru// (1.1)
—> //id +yu:ru// (1.5) [id + ü:ru] 'this is a village'

//i + wû//: //idi + wûɖata// —> //idi + yûɖata// (1.1)
—> //id + yûdata// (1.5) [id + üɖata] 'this is a squirrel'

//i + wû://: //idi + wû:ga + le:du// —> //idi +yû:ga + le:du//
(1.1) —> //id+ yû:ga + le:du// (1.5) [id + ü:ga + le:du]
'this did not swing'

//i + wo//: //adi + woččindi// —> //adi + yoččindi// (1.1)
—> //ad + yoččindi// (1.5) [ad + öččindi] 'she came'

//i + wô//: //adi + wo:ʈu// —> //adi + yo:ʈu// (1.1) —>
//ad + yo:ʈu// (1.5) [əd + ö:ʈu] 'that is a vote'

//i + wô//: //adi + wôkaʈi// —> //adi + yôkaʈi// (1.1) —>
//ad + yôkaʈi// (1.5) [ɘd + ɔkaʈi] 'that is one thing'

//i + wô//: //adi + wo:ɖa// —> //adi +yô:ɖa// (1.1) —>
//ad + yô:ɖa// (1.5) [ɘd + ɔ:ɖa] 'that is a ship'

//i + a//: //wa:ɳɳi+ âɖugu// –> //wa:nni + yâɖugu// (1.1)
–> //wa:ɳɳ + yâɖugu// (1.5) [wa:ɳɳ + æɖugu] 'ask him'

//i + â//: //wa:ɳɳ + âɖaga + le:du// –> //wa:ɳɳi+ yâɖaga +
le:du// (1.1) –> //wa:ɳɳ + yaɖaga + le:du// (1.5)
[wa:ɳɳ + æɖaga + le:du] 'didn't ask him'

//i + a://: //da:nni + a:pu// –> //da:nni + yâ:pu// (1,1)
–> //da:nn + yâ:pu// (1.5) [da:nn + æ:pu] 'stop that'

//i + â:://: //da:nni + â:pa + le:du// –> //da:nni + yâ:pa +
le:du// (1.1) –> //da:nn + yâ:pa + le:du// (1.5)
[da:nn + æ:pa + le:du] 'didn't stop that'

//u + yi//: //guɖɖu + yiǰčindi// –> //guɖɖu + iǰčindi// (1.3)
–> //guɖɖ + iǰčindi// (1.5)
[guɖɖ + iǰčindi] 'she gave an egg'

//u + wu//: //wa:ɖu + wu:guta:ɖu// –> //wa:ɖu + u:guta:ɖu//
(1.3) –> //wa:ɖ + u:guta:ɖu// (1.5)
[wa:ɖ + u:guta:ɖu] 'he will swing'

//ê + yi//: //binde + yiwwu// –> //bindê + iww // (1.3)
–> //bindê + îwwu// (1.4) –> //bind + îwwu// (1/5)
bind + Iww ʊ] 'give a water jar'

//ê + wu//: //ginnê + wundi// –> //ginnê + undi// (1.3) –>
//ginnê + undi// (1.4) –> //ginn + ûndi//
[gin: ʊ ndI] 'there is a cup'

//ê + wo//: //ginne + woddu// –> //ginnê + oddu// (1.3) –>

//ginnê + ôddu// (1.4) –> //ginn + ôddu// (1.5)

[ginn +ɔ d:ʊ] 'I don't want a cup'

//ê + a//: //bindê + adigo:// –> //bindê + adigo:// (1.3)

–> //bindê + êdigo:// (1.4) –> //bind + êdigo// (1.5)

[bind + EdIgo:] 'here is a water jar'

Sequences of //-CV: + (S)V(:)-//

//i: + ye//: //gundi: + yenduku// –> /gundi: + yenduku/ (2.1)

'why a needle?'

//u: + ye:/: //wa:du + ye:dusta:du// –> /wa:du + ye:dusta:du/

(2.1) 'he also weeps'

//o: + ye//: //yêkkado: + yekkutundo:// –> /yêkkado:

+ yekkutundo/ (2.1) 'she will not or will climb'

//ê: + ye:/: //petteê: + yê:da// –> /petteê: + yê:da/ (2.1)

'the box? Where is it?'

//ê: + w //: //a:me: + wundi// –> /a:mê: + wundi (2.2)

'she will also be there'

//ê + wɒ//: //a:mê: + woč̌č̌indi// –> /a:mê: + oč̌č̌indi/ (2.2)

'she also came'

//a: + wu:://: //ɖa:ba:+ wu:ɖu:// > /ɖa:ba: +wu:ɖu/ (2.2)

'clean the house'

//a: + wû:://: //ɖa:ba: + wû:ɖawa + le:du// —> /ɖa:ba +

wû:ɖawa + le:du) (2.2) 'didn't clean the house'

//ê: +a//: //a:me: + aɖugutundi// —> /a:me: + yeɖaga tundi/

(2.3) 'she also will ask'

//ê + â//: //a:mê + âɖaga + le:du// —> /a:me: + yeɖaga +

le:du/ (2.3) 'she also didn't ask'

//a: + wo//: //si:sa: + wodalawe:m// —> //si:sa:wodalawe:m//

(2.2) 'you won't lose the bottle, will you?'

//e: + wô://: //ade: + wô:ɖa// —> /ade: + wô:ɖa/ (2.4)

'That is indeed a ship'

//i: + yi://: //gundi: + yi:ɖa// > /gundi: + î:ɖa/

/gunɖi: + îɖa/ (2.5) 'the needle is here)

//i: + yi//: //gunɖi: + yiĉĉindi// —> /gunɖI: + iĉĉindi/

(2.6) 'she gave a needle'

//i: + wo//: //bi:ɖi: + woddu// —> /bi:ɖi: + oddu/ (2.6)

'I don't want a beedi'

//e:+ yi://: //ne:ne: + yi:dyâ:nu// —> /ne:ne:+ i;dyâ:nu/

(2.6) 'I alone swam'

Kelley's external vocalic Sandhi rules are projected to recognise that two components 'front' and 'lower' have domains or distribution different from those orginarily assigned to segmental vowel phonemes.

6.1.3.1

Kelley's Interest in Consonantal Sandhi

Kelley (1969:382-93) turns to consonantal Sandhi in Telugu. He presents some rules. (This information I got from the reference cited here in. He cites it as a forthcoming publication, but I am not aware of any publication.) He gives a set of six rules for cases involving //-C_1 + VC_2// and //C_1V + C_2//.

1. When C_1 and C_2 differ only in voicing, C_1 assimilates to C_2 and V is deleted. For example:

   aḍugu 'to ask' + ko: (reflexive) —> aṭukko: 'beg'.

2. If C_1 And C_2 are identical, V is deleted. For example:

   na:ku 'to me' + ka:wa:li 'is necessary' —> na:kka:wa:li 'I want'.

3. If C_1 and C_2 belong to the class of apicals/alveolars/post-alveolars then V is deleted. For example:

   pani 'work' + -lu (plural) —> panlu 'works'.

4. Input sequences of C_1 apical stop and C_2 /c, j/ have outputs //cc/ or /jj/. For example:

   pa:ta 'old' + ceppulu 'shoes' —> pa:cceppulu 'old shoes'.

5. If C_1 is voiceless post-alveolar stop and C_2 an alveolar lateral, C_2 assimilates in point of articulation and V is dropped. For example:

   pa:ṭa 'song' + -lu —> pa:ṭlu 'songs'

6. Where C_1 is voiced post-alveolar stop and C_2 is an alveolar lateral or nasal, C_1 assimilates in manner of articulation, and C_2 assimilates in point of articulation. For example:

   gu:ḍu 'nest' + lu —> gu:ḷḷu 'nests'.

Kelley observes that the last two rules are widespread because all the nouns take -lu plural suffix. He notices that presence of these in speech characterises informal speech of educated speakers.

6.1.4

Analysis of Kelley's work

Kelley (1969) observes that the vocalic Sandhi rules proposed by him earlier in 1963 are too cumbersome. His contribution, however, that vowels tend to change in features like 'lower', 'central' or 'higher' in the environment of similar such vowels, is noteworthy. Ramamurti earlier noted only the feature of lowering. Kelley's contribution is worth considering at the phonetic level. It would have been more appropriate if all the situations of vowel lowering and centralisation had been marked in the data provided by him. Although he treats these features under vocalic Sandhi rules, he is describing vowel harmony. His phonetic explanations can also serve as distinguishing features in social and regional dialects.

Kelley (1969) deals with consonantal Sandhi as well. The rules framed by him are very brief and accurate. But not all types of consonantal Sandhi are covered; for instance, many types of plural formation are not covered.

6.1.5

Prakasam's Treatment of Sandhi

Prakasam does not use the concept of phoneme in his description, and hence redefines the concept of Sandhi. Sandhi for him 'is the phenomenon of phonological change - substitution, deletion, insertion, etc. - which takes place when two phonological units join together to make up a higher unit' (Prakasam 1972:169). Prakasam states that Sandhi also includes what is

usually called vowel harmony. Sandhi for him is a phenomenon of change, whereas harmony is one of specification. Vowel harmony is phonetically motivated and phonologically he treats it as N-prosodic harmony.

Prakasam states that harmony operates only at one rank - the foot. whereas Sandhi operates at the ranks of cluster, foot, phrase and tone group, but mainly foot. Prakasam treats Sandhi within a cluster as 'internal Sandhi' and at higher units as 'external Sandhi'. He describes his analysis in nineteen sutras (or principles). I present his Sandhi analysis here, and subject it to critical evaluation in the next section.

Prakasam gives us a general Sandhi process - the deletion of the final vowel of the preceding syllable. This process operates not only at the rank of foot, but also at the rank of phrase and tone group.

Sutra 1: Prakasam deals with final -V deletion under this rule.

i) A V-unit in the final position of a phrase, foot or cluster is deleted when followed by another V in the next unit. He illustrates this with the following examples:

1. adi + e:miṭi –> ade:miṭi.[8]
2. va:ḍu + illu –> va:ḍillu.
3. sutti + a: –> suttæ.[9]

ii) The second context of deletion is as follows: a cluster final -V is deleted when 'C' of the following (C_2) is identical to the C of the preceding syllable. He illustrates this with examples shown below:

---

8. Prakasam provides no translations for the forms.
9. See Example (18) for an explanation of [æ] occurring in place of [a:].

4. pa:ta + ceppu $\xrightarrow[S_{17}]{S_1}$ pa:cceppu[10]

5. cu:cə + te: $\xrightarrow[S_2\ S_{18}]{S_1}$ cu:ste:[11]

6. na:lugu + kə $\xrightarrow[S_3\ S_{15}]{S_{11}}$ na:lukku

7. če:pa + baruvu $\xrightarrow[S_{12}]{S_1}$ ce:bbaruvu

From these descriptions it is clear that by 'cluster' Prakasam refers to the minimum free form, i.e., a monomorphemic word. By 'identical' in the above rule, he means the sounds which have the same place of articulation.

Prakasam observes that in examples (4) and (7) above, the second clusters are basically 'radical'.[12] In the feet (4) and (7) they are functioning as suffixal clusters, and as a result there is no foot stress. If they were to function as separate feet, the foot stress would have been present. If both the clusters of these feet were to be given full radical status, phrases of two-feet structure result, as shown here:

4. a) /'pa:cceppu/

   b) //'pa:ta/'ceppu//

7. a) /'ce:bbaruvu/

   b) //'ce:pa/'baruvu//

4(a) and 7)a), he states, have compound-like constructions syntactically, whereas 4(b) and 7(b) are non-reduced nominal groups (adj.+noun) syntactically.

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10. S followed by a numeral refers to the sutras.
11. Prakasam in his articulatorily-oriented classification of Telugu consonants, groups t, d, s, and c into one group under laminals.
12. By this term what he means is that they can occur as minimum free forms.

4(a) and 7(a) are phonologically considered as enjoying the status of foot, where 4(b) and 7(b) have phonological status of a phrase.

iii) The third context of sutras is as follows: a foot-final V or cluster-final V is deleted if the preceding C is T occurring with n, l, and r prosodies, or θ occurring with S prosody, and the following C is T or θ; he formalises this as under:

$$-\begin{Bmatrix}(1)\\(+)\end{Bmatrix}\frac{KN\,\tilde{\Pi}}{C_2V} \quad \text{if } K_1 = S, n, l, r;\ C_1 = \theta, T;\ C_2 = \theta, T$$

His examples for this are as follows:

8. pa:lu + to: –> pa:lto:

9. pa:lu + ta:gi –> pa:lda:gi

10. ka:su + to: –> ka:sto:

11. ra:si + ḍabbu –> ra:sḍabbu

12. pasuru + to: –> pasurto:

13. netturu + to: –> netturto:

14. manasu + to: –> manasto:

15. ka:ru + ḍabbu –> ka:rḍabbu

16. ce:nu + to: –> ce:nto:

17. ce:nu + ḍabbu –> ce:nḍabbu

Prakasam explains that V-deletion is not paralleled by N - deletion in the above examples. This prosody retention in the same syllable results in combinations of N-prosodies.

18. a) a:ku + a: –> a:ka:

b) ka:ki + a: –> ka:ka:

The vowel a in 18(a) is more rounded, and in 18(b) it is less rounded, and he explains the reason as absence of prosody

deletion w of the preceding syllable in 18 a). The [a:] in 18 c) is palatalised.

18. c) baḍi + a: —> baḍæ:

In some other cases, Prakasam observes that a phonological stretch may be considered as one complex syllable or as a complex stretch of two syllables.

19. adi + undi —> (a) adundi

(b) $ad^{y}undi$

Foot stress in 19(a) is less significant than that in 19(b).[13]

iv) The fourth context of Sutra 1 is as follows: in the case of verbal feet the final V is deleted when the preceding C is T occurring with $\bar{V}$ or N prosody, and accompanied by the cluster prosody of consonantal length.

38. koṭṭu + tu: —> koṭ̬tu:

39. porəṭə + te: —> poriṭ̬(i)te:

40. peṭṭə + te: —> peṭ̬te:

($ṭ̬$ = slightly voiced ṭ).

These four contexts are covered by Sutra 1. The next three sutras operate at the rank of foot and deal only with acquisition and specification of N prosodies. These are considered by me under vowel harmony (cf.5.1.7). Prakasam observes that his first four sutras deal with presence or absence of the character of features related to vowels or vocalic units of the phonetic syllables. Hence he identifies the first four sutras of his analysis as those denoting vowel Sandhi processes. He then turns to explain non-vowel Sandhi processes in the remaining sutras. Under non-vowel Sandhi

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13. At this juncture Prakasam lists a set of examples to explain the complex phonetic exponents, including that of æ. I do not consider them as they are not relevant to my discussion.

processes he considers those which affect C units, K prosodies and cluster prosodies. Laminalisation and apicalisation are separated from the rest on the grounds that in those two processes replacement or adjustment of a C unit by another to suit the next C unit is found.

Sutra 5 (Laminalisation)

Apical T occurring with n prosody in the preceding syllable is replaced by laminal Θ when the following C unit is Θ in a suffixal cluster. Examples are:

71. (vb) pu:nə + tu: → pu:n̻tu:
pu:n̻utu:

72. (N) ma:nu + to: → ma:n̻to:

73. (vb) pu:nə + te → pu:nite: → pu:n̻ite: → pu:n̻te:

74. (vb) dunnə + te: → dunnite: → dun̻te:

75. (vb) pu:nə + da:m → pu:nuda:m → pu:n̻da:m

76. (vb) vinə + da:m → vin̻da:m

77. (vb) dunnə + da:m → dunnuda:m → dun̻da:m

[n̻ = post-Sandhi laminal nasal]

Sutra 6 (Apicalisation)

In verbal suffixes laminal n co-occurring with $\bar{V}$ is replaced by apical T when the verb radical is short and the final syllable is of the structure $\frac{n}{Tə}$

Examples are as follows:

78. vinə + t̻e: → vinte:

79. anə + t̻e: → ante:

80. kanə + t̻e: → kante:

81. kanə + t̻u: → kantu:

[t = post-Sandhi apical voiceless obstruent]

Prakasam compares the two Sutras 5 and 6 in the following examples:

83. anə + tu $\xrightarrow{S6}$ antu:

anə + da:m $\xrightarrow{S5}$ anda:m

84. tannə + da:m $\xrightarrow{S5}$ tannuda:m
tanda:m

tannə + te: $\xrightarrow{S5}$ tannite:
tante:

85. dunnə + tu: $\xrightarrow{S5}$ dunnutu:
duntu:

dunnə + da:m $\xrightarrow{S5}$ dunnuda:m
dunda:m

86. konə + tu: $\xrightarrow{S6}$ kontu:

konə + da:m $\xrightarrow{S5}$ konda:m

Sutras 7 and 8 are concerned with the processes of cluster prosodies of verbal radicals.

Sutra 7 (consonantal length (H) deletion)

The prosody of H is deleted when the optional Sutra 5 has been applied to a verbal radical before a C-initial suffix (CV). For example:

88. pa:ɖə + tu: $\xrightarrow[S_2\ S_1]{S_7}$ pa:ɖtu: → pa:ʈ̥tu:

89. kottə + tu: $\xrightarrow[S_2\ S_1]{S_7}$ koʈ̥tu:

90. nettə + tu: $\xrightarrow[S_2\ S_1]{S_7}$ neʈ̥tu:

91. mottə + tu: —moʈ̥tu

[ʈ̥] = slightly voiced [ʈ]

Application of Sutra 7 results in laxation and slight voicing.

Prakasam suggests that laxation can be considered as an exponent of the prosody.

Sutra 8

When a perfective suffix i is added to a short disyllabic verb stem, the latter acquires consonantal length. It is also possible that the perfective suffix itself is deleted. For example:

$$paḍə + i + di \xrightarrow[S_1\ S_9]{S_2} paḍḍindi$$

$$paḍə + a:di \xrightarrow[S_1]{S_8} paḍḍa:di$$

Both these cases are stated to occur in Prakasam's own dialect. At this juncture he makes a study of these forms across the Telangana and Rayalaseema dialects, and notes that Sutra 8 does not apply to them.

The next three sutras of Prakasam deal with the process of insertion. Traditional Telugu grammarians have discussed Telugu suffixes under two heads as n-ending and non-n-ending. Prakasam treats nasality as an inserted feature in certain Sandhi contexts.

Sutra 9

Nasality is inserted in the following contexts. Phonetically, Prakasam notes, homorganic nasality before C units and apical nasality before V units. Examples:

i) $ce:sə + i + a:ḍu \xrightarrow[etc.]{S_9}$ ce:sina:ḍu, ce:sæḍu

$ce:sə + i + di \xrightarrow[etc.]{S_9}$ ce:sindi

ii) $ce:sə + a + e: \xrightarrow[etc.]{S_9}$ ceyyane:

$ce:sə + a + akkara \xrightarrow[etc.]{S_9}$ ce:yanakkára, ce:yakkara

$ce:sə + a + ga: \xrightarrow[etc.]{S_9}$ ce:yanga:, ce:yaga:

$ce:sə + a + iccu \xrightarrow[etc.]{S_9}$ ce:yaniccu

iii) ce:sə + tu + di: $\xrightarrow[\text{etc.}]{S_9}$ ce:stundi

ce:sə + tu + a:ɖu $\xrightarrow[\text{etc.}]{S_9}$ ce:sta:ɖu[14]

iv) ce:sə + tu: + e $\xrightarrow[\text{etc.}]{S_9}$ ce:stu:ne

va:ɖu + e: + a $\xrightarrow[\text{etc.}]{S_9}$ va:ɖe:na:

kiṭiki: + a: $\xrightarrow[\text{etc.}]{S_9}$ kiṭiki:na:

po: + e: $\xrightarrow{S_9}$ po:ne:

ra: + e: $\xrightarrow{S_9}$ ra:ne:

(etc., in each example refers to other relevant sutras of Prakasam)

Sutra 10

This sutra deals with the insertion of two glides, a palatal y and labial w.

i) A palatal glide is inserted when the preceding syllable can be described as having the V unit I and the following syllable is a V-initial one. Examples:

ṭi: + aɖam –> ti:yaɖam

gunḍi: + a: –> gunḍi:ya:

ii) A labial glide is inserted when the preceding syllable is not $\frac{Y}{I}$ and is not followed by a long vowel. Examples:

ka: + aɖam –> ka:waɖam

po: + aɖam –> po:waɖam

(i) is applicable to verbal as well as non-verbal forms, whereas condition (ii) is applicable only to verbals.

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14. This form according to his rule must be ce:stuna:ɖu, but the thesis presents it as ce:sta:ɖu

Sutra 11

A bilabial nasal [m] is inserted between a reported singular imperative verb and the reporting verb 'anu'. Examples:

ceyya + ani –> ceyyamani

pa:ɖa + ani –> pa:ɖamani

Prakasam traces this [m] historically to the second person singular mu in old Telugu. He treats is as an inserted m rather than an underlying m, and gives the following examples:

pa:ɖamu + anna:ɖu –> paɖamanna:ɖu '"we won't sing" he said'

pa:ɖa + anna:ɖu –> pa:ɖamanna:ɖu 'he told (X) to sing'

He observes that in the first example it is a loosely closed bilabial nasal. I have not treated this as a Sandhi phenomenon. In this thesis this has been dealt with under vowel harmony, cf. 5.1.10.3.

Sutra 12

This in essence deals with voice assimilation. When two syllables with identical C units come together in Sandhi; after deleting medial V (Sutra 1) the preceding C will harmonise with the following one. Examples:

pa:ta + di –> pa:tdi[15]
°
pa:ddi

ce:da + to: –> ce:ɗto:[16]

cetto:

ceruku + gada –> cerukgaɖa
°
ceruggaɖa

---

15. t̥ is slightly voiced.
16. ɗ̥ is slightly devoiced.

Sutra 13 (retroflexionalisation)

Prosody of retroflexion (R) affects the syllable next to it when both the syllables have C unit 'T'. Examples:

paːɖu + nuːne → paːɳɳuːne

poːʈu + lu → poːʈɭu

taːʈi + naːra → taːʈɳaːra

baɖi + loː → baɭɭoː

Sutra 14 (nasalisation and lateralisation)

Nasality and laterality co-occur with 'T' of the following syllable and replace V prosody of the preceding syllable with T as its C unit. Examples:

baɖi + lu $\xrightarrow{S_1}$ baɭɭu
(S13 & S14)

guɖi + lu $\xrightarrow{S_1}$ guɭɭu
(S13 & S14)

davaɖa + lu $\xrightarrow{S_1}$ davaɭɭu
(S13 & S14)

koːɖi + ni $\xrightarrow{S_1}$ koːɳɳi
(S13 & S14)

Sutra 15

This rule is similar to Sutra 14, but it is restricted to lateralisation. A following syllable with a lateral will have a lateralising effect on the preceding syllable. Examples:

naːɖu + lu → naːɭɭu 'number of days'

kaːlu + lu → kaːɭɭu 'legs'

uːru + loː → uːɭɭoː 'in the village'

Prakasam observes that this process also occurs in disyllabic forms (which denote a body part, semantically) when followed by a plural suffix. Examples:

kannu + lu —> kaḷḷu 'eye'
kaṇṭu

pannu + lu —> paḷḷu 'tooth'
paṇḷu

cannu + lu —> caḷḷu 'breast'
caṇḷu

Sutra 16

The addition of a plural suffix results in the deletion of length prosodies H or N. (The exponents of H are r, l and those of N are retroflex stops and nasals.) Examples:

teḍḍu + lu > teḍḷu

toṭṭi + lu —> toṭḷu

caṭṭi + lu —> caṭḷu

doḍḍi + lo: > doḍḷo:

karra + lu —> karlu

mullu + lu —> muḷḷu

kannu + lu —> kaṇḷu
kaḷḷu

gaṇḍi + lu —> gaḷḷu
gaṇḍḷu

Sutra 17 (sibilance or obstruent sibilance)

The sibilance prosody (with or without obstruent voice) affects the preceding syllable by replacing its voice prosody. Examples:

ća:du + ćukka —> ca:ććukka

pa:ta + su:di —> pa:ssu:di

pa:ta + jalleḍa —> pa:jjalleḍa

mo:ta + ćappuḍu —> mo:ććappuḍu

su:di + sannam —> su:ssannam

kotta + ćeppulu —> koććeppulu

kotta + sunnam —> kossunnam

cetta + jalleḍa —> cejjalleḍa

Sutra 18 (obstruent)-sibilance reduction

This rule is operated if the verbal radical-final syllable is not accompanied by N or H prosody. The V/$\bar{V}$ prosody of the syllable occurring with S gets deleted in the case when the following suffixal syllable is marked by $\bar{V}$. Examples:

ra:cə + tu: —> ra:stu

i(c)cə + da:m —> idda:m

ra:cə + da:m —> ra:dda:m

mo:sə + da:m —> mo:dda:m

kaləsə + da:m —> kaludda:m

Sutra 19

'Nasal extension' (m) prosody changes into vowel length extension. The final syllable of the stem before a plural suffix or adjectival mark extends it length. Examples:

gurram + lu —> gurra:lu

gurram + ni + ki —> gurra:niki

ballem + lu —> balle:lu

ballem + ni + ki —> balle:niki

pandem + ni + ni —> pande:n(i)ni

Prakasam in his analysis cited above does not separate external and internal Sandhi.

6.1.6

Discussion of Prakasam's Rules

Prakasam (1972) considers external Sandhi and internal Sandhi but does not deal with them separately. His observation that 'deletion of the final vowel of the preceding syllable is the general Sandhi process in

Telugu is not fully explained. His Sutra 1 takes into account foot stress, but he does not take stress fully into account in his consideration of Sandhi. In his example (cf. 6.1.5, Example No.9) there is voicing of the intermediary consonant after Sandhi, but he has not explained it. After Sutra 1 he talks of vowel harmony under Sandhi. Then from Sutra 5 to Sutra 19 he discusses consonantal Sandhi.

Sutra 5 deals with laminalisation. n prosody of the preceding syllable is replaced by a laminal. He treats the resulting n̪ as post-Sandhi laminal nasal. Under Sutra 6, he mentions the t̪ post-Sandhi apical voiceless obstruent. In Sutra 7 he cites t̪ as the resultant form which is slightly voiced. For none of these phonetic changes does he offer an explanation.

All these sutras can be accommodated under my four simple nominal and verbal suffix stress rules. In the case of Sutras 5 and 6, the changes can be explained by my stress rules 7 and 8 (cf. 3.2.2.1).

Sutras 5, 6 $-C_1(C_1)V_1 + C_2V_2 \rightarrow C_3V_2-$

C_3 is either a laminal (in the case of Rule 5) or apical voiceless obstruent (in the case of Rule 6). Prakasam never recognises the conditioning factor, that is, the preceding syllable is long in the case of Sutra 5. His Sutra 6 for me results in retroflex consonants.

In the case of Sutra 7 the change is as follows

$$\begin{matrix} -C & C & V & + & C & V & - - > & -C & C & V \\ 1 & 1 & 1 & & 2 & 2 & & 3 & 2 & 2 \end{matrix}$$

C_3 is slightly voiced t̪. (For examples see 6.1.5.)

In all three cases of Sutras 5, 6 and 7 mentioned above, it is interesting to observe that the consonant geminate is reduced to a single consonant before the stressed syllable and V_1 is totally lost. In the case of Sutra 5 and 6, the consonants involved are nasals. It may be that

because nasals are alveolar, only slight fronting takes place before dental [t] with regard to place of articulation. In Sutra 7, the position is somewhat different. $-C_1(C_1)V_1$ are composed of voiced/voiceless retroflex stops + high back rounded vowel. When they are followed by a suffix, the following changes take place:

$$-C_1(C_1)V_1 + C_2\bar{V}_2 \rightarrow C_3C_2\bar{V}_2$$

Phonetically C_3 is slightly voiced (see Sutra 7 for examples). The reduction of consonant geminate before a stressed vowel results in slight voicing of the [t̪]. Again, interestingly enough, it is [t̪] which is affected, although [t̪] is generally not affected by Sandhi.

Prakasam's Sutras 8, 9 and 10 are pertinent to his dialect, i.e., Nellore district speech, and I do not propose to consider those here. The peculiarity of Nellore district is mentioned in 1.1.4 of this thesis. His Sutra 11 is considered under vowel harmony (cf. 5.1.7). His Sutra 12 deals with slightly voiced and slightly devoiced consonants in Sandhi situations. The examples are:[17]

ce:da + to: → ce:d̥to: 'with a bucket'

pa:ta + di → pa:t̪di 'old one'

His observation that the syllables with identical C units across Sandhi harmonise with each is not sufficient. The reason for voicing or devoicing rests mainly with the suffix initial consonant. If the suffix initial consonant is voiceless, then after Sandhi the suffix preceding C is slightly devoiced, and if the suffix initial consonant is voiced after Sandhi, the suffix preceding consonant is slightly voiced.

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17. In the example d̥ is slightly devoiced and t̪ is slightly voiced.

To this situation, my stress rule can be applied. When the unstressed syllable nucleus is reduced before a stressed initial syllable of the suffix, the following changes take place:

$-^{\breve{}}CV + {}'^{\breve{}}CV \rightarrow {}^{\breve{}}C{=}^{\breve{}}CV$

$-^{\breve{}}CV + {}'^{\breve{}}CV \rightarrow \quad C^{\breve{}}CV$

In his Sutra 13 Prakasam discusses retroflexion. His observation that prosody of retroflexion affects the syllable next to it when both have C-unit T is in itself not sufficient. The stress rule which applies to other cases is also applicable to this sutra. Sastry (1974) gives a phonetic explanation for this (cf. 6.1.7). One interesting feature is that [ʈ] functions differently from [ɖ] under identical circumstances.

In Sutra 14 Prakasam deals with nasalisation and lateralisation. I do not see any difference between Sutra 13 and Sutra 14. Sutra 13 deals with forms like

$-C_1V_1 + C_2V_2 \rightarrow CCV_2$ (V_1 is lost in Sandhi)

C_1 in the case of both the rules can be a retroflex stop. C_2 in the case of both the rules can be a lateral or nasal. Under Sutra 13 he has also provided examples with [ʈ] in C_1 position. (However, he fails to notice the difference between [ʈ] and [ɖ] in Sandhi situations.) Sutras 13 and 14 in separate forms are irrelevant.

That is not the end of it. Prakasam's rule 15, according to me, has no place. It is not clear why na:ɖu comes under Sutra 15 and not under Sutra 14, where the rest of the words of similar structure are given, unless it is because initial C is a nasal and not a stop. But initial C has no relevance to the Sandhi. Prakasam says his Sutra 15 is restricted to lateralisation, but not nasalisation, and cites examples like:

ka:lu + lu → ka:ɭɭu

u:ru + lo: → u:ɭɭo:

These are perfectly sufficient to match his sutra, but what happens when

ka:lu + lo: —> ka:llo: but not *ka:lo:

is anybody's guess. Prakasam states that nasalisation is not possible under Sutra 15, but I have certain forms in my data from Coastal and Rayalaseema speech, like,

e:ɖu + ni —> e:ɳɳi 'seven' (accu.)

ko:ɖu + ni —> ko:ɳɳi 'leg of a cot' (accu.)

Prakasam under the same Sutras 14, 15 and 16, mentions some plural forms of the nouns, and under 16 the nouns relating to body parts in plural formation. I am convinced that the plural formation and nominal suffixes across Sandhi deserve to be treated as a separate section under Sandhi. Case markers and plural suffix induce vowel harmony sometimes at some places and induce consonantal harmony at other times, and at other places. I will discuss this in Sections 6.2.2, 5.3.1.2

Prakasam's Sutra 16 also deals with plural formations. Again, surprisingly enough, this rule overlaps with Sutra 15, not only in content but also in certain examples. This provides further support for my argument that plural formation needs to be treated differently, preferably being treated prosodically because no other descriptive model will be able to accommodate all the aspects.

Prakasam's Sutra 17 deals with sibilance or obstruent sibilance. For him, based on articulatorily-oriented classification of Telugu consonants t, d and c, j, s, ś, ṣ ʃ all under one group, i.e., the laminals. This rule is irrelevant because it can be accommodated under his rule 1 more precisely under the second context of rule 1. The C in rule 1 is considered to be a stop sound. But as per his classification t̪, d̪ are laminals. Under rule 1 he cites an example:

pa:ta + ceppulu —> pa:cceppulu

and under Sutra 17 he cites pa:ta + jalleḍa —> pa:jjalleḍa.

I do not see any difference in the situation, and have come to the conclusion that there is an unnecessarily large number of rules given by Prakasam. Of course, for all practical purposes, my main stress rule will accommodate this rule.

Under Sutra 18 he cites the forms like ra:cə and i(c)cə as verbal radicals. I am familiar with i(c)c as the radical form of the verb in most of the dialects of Telugu, but am not aware of the form ra:c in any dialect of the Telugu language. It is not clear how the $\bar{V}$ of the following syllable is responsible for application of this sutra.

Sutra 19 also deals with another type of plural formation in Telugu. This particular type is restricted to all -am [aw̃] ending forms of the Telugu noun class. I will deal with this under the plural formation section in detail (cf. 6.2.2).

In summary, it can be said that Prakasam mixes up the old Telugu forms and new Telugu suffixes. In fact, new Telugu suffixes are only used with modern Telugu forms. Prakasam tries to give rules for Sandhi when old Telugu forms are combined with modern Telugu suffixes. For example:

Sutra 1, context 1: cu:cə + te: —> cu:ste:

He postulates certain Sandhi rules which according to my analysis are unnecessary. There are certain morpheme variants or allomorphs which have specified functions. For example, his rule 7 deals with forms like kottt-, nettt-, and mottt-. In Telugu, we have two allomorphs for such verb roots as

kottt-	nettt-		mottt-
		and	
koḍ-	neḍ-		moḍ-

Each allomorph has a defined role, i.e., -tt- ending can occur before finite verb suffixes, and -ḍ- ending with non-finite suffixes. Hence I do not consider this as Sandhi.

Under his Sutra 9 he introduces the theory of 'nasality insertion'. The examples shown by him are from modern Telugu. In this case he tries to show Sandhi between a modern Telugu verb root, and an old Telugu suffix form. For example:

ce:sə + a + akkara → (i) ce:yanakkara

(ii) ce:syakkara

I am unaware of the form cited in (ii) above.

I take the form as a vestige of old Telugu remaining in modern Telugu. For me it is,

ce:yan + akkara → ce:yanakkara

[ce:yan] is the infinite verb root form in old Telugu.

Prakasam's other examples can also be traced back to some valid reason, but not to Sandhi as he claims. In Sutra 10 he discusses insertion of palatality and labiality. But for te: + aḍam → te:waḍam, all other examples that he cites are irrelevant. In my data they are as follows:

po:wu + aḍam → po:waḍam

ti:yu + aḍam → ti:yaḍam

w and y are part of the verb root, so the need for w and y insertion does not arise.

6.1.7

Modificatory Features Discussed by Sastry (Present author):

J.V.Sastry (1974) discusses Sandhi phenomena in phonetic terms under the label of modificatory features in Telugu.

Nil/breathed vs. voiced phonation

The space between the vocal folds is known as the glottis. When the airstream passes through the glottis it may be open and the vocal folds are drawn wide apart. This is the position of glottis and vocal folds for breathed phonation. This causes what is generally known as voiceless quality. Vocal folds are held loosely together and vibrate when the airstream passes through the glottis; this produces voiced quality. The breathed phonation and voiced phonation in the case of contrasting pairs like p-b, t-d, ṭ-ḍ, c-j, and k-g have a dynamic quality affecting the preceding consonant of the same segmental quality in a Sandhi context.

Ex: ceruku + gaḍa ⟶ ceruggaḍa 'sugar cane'

pa:ta + dho:ti ⟶ pa:ddho:ti 'old loin cloth'

Aspiration vs unaspiration

When air comes out of the lungs the compression may be less or more; the compression depends upon the pressure exerted by the diaphragm. If the pressure is comparatively high, the release of the air passage is followed by an extra puff of breath. This particular feature is known as aspiration.

Aspiration is non-native to the Telugu sound system. It is a feature relevant to Sanskrit-loans to Telugu: [kh] [gh] [th] [dh] [jh] [ch] [ḍh] [ph] and [bh] are aspirated sounds in Telugu. For examples see Sastry (1972).

Nasality

Nasalisation is a process where there is no complete velic closure. Nasalised vowels are observed in Telugu in the environment of nasal consonants. Nasalisation is stronger in the post nasal vowel in the context of intervocalic

nasal consonants.

Retroflexion

It can be considered as a modification of the apical articulation. This phenomenon is a modificatory feature in the sense that it modifies the apical articulation by choosing the back part of the apex as the exact articulator. This feature also has the dynamic property of affecting other apical sounds in a Sandhi context.

A retro-cerebral sound like [ʈ] or [ɖ] modifies the non-modified apical sounds [n] and [l] and [r] into modified i.e. retroflexionalised apicals [ɳ] and [ɭ]. Before this modification applies in a Sandhi context, the vowel is last between two apical consonants.

Ex:	to:lu + ʈo:pi:	⟶	to:ɭʈo:pi:	'fur cap'
	pa:la + ɖabba:	⟶	pa:ɭɖabba:	'milk can'
	pa:ʈi + nu:lu	⟶	pa:ʈɳu:lu	'a fine variety of yarn'
	po:ʈu + lu	⟶	po:ʈɭu	'shooting pain'
	nu:ne + ɖabba:	⟶	nu:nɖabba:	'oil tin'
	baɖi + ni	⟶	baɳɳi	'school' (accusative)
	baɖi + lu	⟶	baɭɭu	'schools'
	baɖi + lo:	⟶	baɭlo:	'in the school'

The examples illustrate the dynamic feature of nasality and laterality in affecting the voiced apical in the immediately preceding position. So laterality and nasality in this connection are, in a sense, modificatory features. Laterality is stated to be a release modification feature which results in the oral quality being modified into nasal quality.

6.1.8

Criticism of Sastry's Analysis

Sastry (1974) lists modificatory features, but fails to identify the

stress feature. He observes, fairly enough, that the breathed phonation and voiced phonation in the case of contrasting pairs like p-b, t-d, ʈ-ɖ, c-j and k-g have a dynamic quality affecting the preceding consonant of the same segmental quality in a Sandhi context. However, this is more general than he has shown and applies also to b-p, d-t, ɖ-ʈ, ɟ-c and g-k.

Sastry observes that a retro-cerebral sound like [ʈ] or [ɖ] modifies the non-modified apical sounds [n], [l], and [r] into [ɳ] and [ɭ]. He fails to observe that [ʈ] retains its shape whereas [ɖ] is mostly modified to [ɳ] or [ɭ]. He observes that laterality is a release modification feature which is acceptable, but he also states that oral quality modifies into nasal quality because of lateral release. This part is quite mistaken. Lateral release has nothing to do with nasal quality.

Sastry fails to notice that two different modifications of apical articulation in retroflexion context take place. They are: if the suffix initial consonant is a nasal or lateral and the second syllable of the noun has a retroflex consonant then the modificatory feature is complete. That is to say, the suffix consonant will acquire retroflexion and in turn extend nasality or laterality to the consonant of the second syllable of the noun. For example,

'baɖi + 'ni ⟶ 'baɳɳi 'school' (accusative)

'baɖi + 'lo ⟶ 'baɭɭo: 'in the school'

If the suffix (or noun) initial consonant is a retroflex and the second syllable of the preceding noun has a nasal or lateral consonant the situation is different. In such cases retroflexion modification extends to the second syllable consonant of the noun, but the reverse is not possible. For example,

'nu:ne + 'ɖabba: ⟶ 'nu:nɖabba: 'oil tin'

'to:lu + 'ʈo:pi ⟶ 'to:lʈo:pi 'fur cap'

These cases are no exception to my present finding, i.e. the main stress rule. In the above data I have marked stress in order to show the relationship.

6.1.9

Sarma's Analysis of Sandhi and Assimilation in the Telangana Dialect

Sarma (1974) in his analysis of the Telangana dialect of the Karimnagar district, considers two aspects of morphophonemics. The variations in phonemic representations of morphemes occurring within a word, for him, constitute internal Sandhi and those occurring when two words come together constitute external Sandhi. He has given ten rules each for external and internal Sandhi and another thirteen rules besides for the assimilation process. First I present a brief summary of his analysis and later I will present a criticism of the same, in the following section.

External Sandhi

Rule 1: The final /u/ of a word is automatically dropped when a word beginning with a vowel follows, e.g.:

aydu + a:ru ⟶	ayda:ru	'five and six'
nelaku + okasa:ri ⟶	nelako:sa:ri	'once in a month'
ji:ta:lu + ekki ⟶	ji:ta:lekki	'salaries having been enhanced'
daraka:stu + istaḍu ⟶	daraka:stistaḍu	'he will give application'
ra:ju + uṇḍe: ⟶	ra:juṇḍe	

Rule 2: Very frequently word final /i/ is dropped when a word beginning with a vowel follows:

okariki + okaru ⟶	okarikokaru	'one for another'
aṭuwaṇṭi + appuḍu ⟶	aṭuwaṇṭappuḍu	'at such a time'
maḷḷi + eṭanna ⟶	maḷḷeṭanna	'again in same direction'
ru:pa:yi + uṇṭadi ⟶	ru:pa:yuṇṭadi	'it will be a rupee'
lungi + iccinḍ:u ⟶	lungiccin:ḍ:u	'he gave a lungi'

Rule 3: Word final /a/ is also dropped very often before a word beginning with a vowel, e.g.

du:pa + ayta:ndi	⟶	du:payta:ndi	'feeling thirsty'
akkaḍa + ikkaḍa	⟶	akkaḍikkaḍa	'here and there'
inka + oka	⟶	inkoka	'another one'
akkaḍa + ette:si	⟶	akkaḍette:si	'having thrown these forcibly'
kari:mna:rla + uṇṭi	⟶	kari:mna:rluṇṭi	'having stayed in Karimnagar'

Rule 4: The initial short vowel of a word is lost following a word final long vowel, e.g.

ma: + amma:yi	⟶	ma:mma:yi	'my daughter'
Vaccinde: + andukoraku	⟶	Vaccinde:ndukoraku	'the very coming is for that reason'
adi: + idi	⟶	adi:di	'that and this'

Rule 5: In a few cases, a glide /y/ occurs between a word final /i/ and a word initial vowel. If the /i/ is short, it is lost, e.g.

mi: + aṭvaṇṭi	⟶	mi:yaṭvaṇṭi	'like yourselves'
adi + oka	⟶	adyoka	'it is a ... '

Rule 6: Most frequently a word final /i/ and a word initial /a/ get fused into //A//, e.g.

ma:di + a:	⟶	ma:dA	'ours?'
vaḍḍi + ayindi	⟶	vaḍḍAyindi	'so much interest resulted'
undi + aṇḍi	⟶	undAṇḍi	'it is (there) Polite

//A// is equivalent phonetically to [æ] and Sarma calls it a morphophoneme of /e/.

Rule 7: Word final vowels are often dropped before words beginning with consonants also resulting in intervocalic (similar or dissimilar) consonant clusters, e.g.

	Poga:ku + paṇṭa	⟶	poga:kpaṇṭa	'tobacco crop'
/u/	ma:ku + kaṣṭa:lu	⟶	ma:kkaṣṭa:lu	'difficulties for us'
	e:ḍu + mayl̤u	⟶	e:ḍ(u)mayl̤u	'seven miles'
/i/	mari + reṇḍu	⟶	marreṇḍu	'another two'
	da:ni + tarva:ta	⟶	da:ntarva:ta	'after that'
	e:mi + kata	⟶	e:mkata	'what is the matter?'
/a/	oka + sa:ri	⟶	oksa:ri	'once'
	daggara + daggara	⟶	daggardaggara	'approximately'

Rule 8: When two words enter into Sandhi, the initial voiceless stop of the second word becomes voiced mostly when the last consonant of the first word is a voiced one or when the first word ends in a vowel. Normally this rule operates after rule 7.

k - g	pedda + ka:le	⟶	peddaga:le	'not grown old'
	'ippuḍu + 'ku:ḍa	⟶	ippuḍuguḍa	'even now'
c - j	pulini + campina	⟶	pulinjampina	'skilled as a tiger'
	taya:ru + ce:si	⟶	taya:rje:si	'having made ready'
t - d	baṭṭalu + temmanṇḍu	⟶	baṭṭaldemmanṇḍu	'he wanted me to bring clothes'
	appulu + testu:	⟶	appuldestu:	'raising loans'
p - b	intaku + pu:rvam	⟶	intakubu:rvam	'earlier'
	ni:lto:ni + paṇḍtadi	⟶	ni:lto:n(i)baṇḍtadi	'it yields crop when watered'

Rule 9: The pre-final voiceless consonant of a word rarely gets voiced before a voiced consonant, e.g.

na:ku + le:d(u)	⟶	na:gle:d(u)	'I do not have'
manaku + ji:ta:l(u)	⟶	managji:ta:l(u)	'salaries to us'

Rule 10: Sometimes the initial /p/ of a word becomes /v/ when the word follows another word [18], e.g.

ni:llu + peṭtam	⟶	ni:lluveṭtam	'we water'
lekka + peṭṭandi	⟶	lekkaveṭṭandi	'please count'

Sarma provides good data to support his rules. However, I am not convinced that these many rules are necessary to describe Sandhi in the dialect of Telugu. I will explain in later sections of this Chapter how these rules are not relevant and are unnecessary (see 6.2.3).

Internal Sandhi

Sarma, gives another set of ten rules for internal Sandhi.

Rule 11: Normally, the second vowel in a word when short, is dropped, resulting in consonant clusters, e.g.

nimputaru	⟶	nimptaru	'they fill'
lo:paṭa	⟶	lo:pṭa	'inside'
batakale:mu	⟶	batkale:mu	'we cannot survive'
go:tile	⟶	go:tle	'in the pit'
cadivina	⟶	cadvina	'I read'
koḍuku	⟶	koḍku	'son'
ekkuva	⟶	ekva	'more'
ce:sukonu	⟶	ce:skonu	'to do for oneself'
dasaraku	⟶	dasraku	'for Dasara festival'
Samayam	⟶	Samyam	'time'
pilici	⟶	pilci	'having called'

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18 Sarma does not say that [p] > [v] without losing the stem final vowel of the preceding word.

Rule 12: (a) The third vowel of a unit word[19] which is short is sometimes dropped, e.g.

a:lo:cana	⟶	a:lo:cna	'thought'
na:garikata	⟶	na:garkata	'civilisation'

(b) The final short vowel of a trisyllabic word is dropped when it precedes a suffixal morpheme beginning with a consonant, e.g.

andariki:	⟶	andarki:	'to all people'
a:ṭalalo:	⟶	a:ṭallo:	'in games'
ekkaḍidi	⟶	ekkaḍḍi	'from which place?'
tondaraga:	⟶	tondarga:	'quickly'

Rule 13: In a few cases both Rule 12 and Rule 13 operate simultaneously, e.g.

kalugutundi	⟶	kalgtundi	'it occurs'
dorukutaya	⟶	dorktaya	'will they be available?'
bayalude:ru	⟶	baylde:ru	'to start'

Rule 14: A cluster of identical consonants preceding a second short vowel in a word is simplified into a single consonant. This rule operates immediately following Rule 12, e.g.

oppuko:ru	⟶	opko:ru	'they won't agree'
ekkuva	⟶	ekva	'more'

Rule 15: Sometimes the middle member /ḍ/ or /n/ of a triconsonant cluster is dropped, e.g.

ndr — nr	taṇḍri	⟶	tanri	'father'
	cu:ḍuṇḍri	⟶	cu:ḍuṇri	'please see'

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19 Unit word is a monomorphemic word.

ndl — nl	baṇḍḷu ⟶	banlu	'carts'
	e:ṇḍḷu ⟶	e:nlu	'years'
gny — gy	gnya:nam ⟶	gya:nam	'knowledge'
rnm — rm	gavarnmeṇṭ ⟶	gavarment	'government'

Rule 16: Usually the second syllable of the types and environments mentioned below is lost.

The second syllable of the shape CV following a long vowel is dropped, e.g.

le:kapo:te:	⟶	le:po:te:	'if not'
ba:gane	⟶	ba:ne	'well, fine'

Rule 17: The second syllable of the shape CV is dropped after a short vowel when the C is either /d/ or /r/, e.g.

caduvutunna:ru	⟶	cavutunna:ru	'they are reading'
modalu	⟶	molu	'beginning'
u:rike	⟶	u:ke	'for no reason, simply'

Rule 18: The second syllable of the shape C_1 V C_2 of which C_1 and C_2 are the same or similar, is reduced to C_2, e.g.

aynanta	⟶	aynta	'as much as finished'
samanjasanga:	⟶	sanjasanga:	'suitably'

Rule 19: The third syllable CV or CVm/$_n$ where C is /k g y V h/ is dropped or reduced to /m n/ respectively, when it follows a long vowel, e.g.

ru:pa:yalu	⟶	ru:pa:lu	'rupees'
ganaka	⟶	gana	'therefore'
caduvukoni	⟶	cadukoni	'having read'

Rule 20: If the fourth syllable is /va/ or a repeated third syllable, it is dropped, e.g.

Senagavaram	⟶	Senagaram	'name of a village'
paristitiga	⟶	paristiga	'as a situation'

After proposing the above twenty rules for 'external and internal' Sandhi, Sarma considers assimilation processes. For consonantal assimilation he proposes the undermentioned rules. These are listed here and will be examined later to see whether they are in any way different from his internal Sandhi processes.

Rule 21: A /t/ or /d/ preceding a /y/ gets palatalised into /c/ or /j/ respectively, e.g.

ty — cy	satyam	⟶	sacyam	'truth'
	mutyam	⟶	mucyam	'pearl'
dy — jy	udyo:gam	⟶	ujyo:gam	'job'
	madya	⟶	majya	'middle'

Rule 22: A /l/ or /n/ preceding or following a retroflex stop gets retroflexed, e.g.

ṭn — ṭṇ	va:ṭini	⟶	va:ṭṇi	'them' (n.n.)
	renḍiṭini	⟶	renḍiṭṇi	'both of them'
ṭl — ṭḷ	baṭṭalu	⟶	baṭḷu	'clothes'
ḍn — ḍṇ	va:ḍini	⟶	va:ḍṇi	'him'
dl — ḍḷ	va:ṇḍulu	⟶	va:ṇḍḷu	'they' (n.)

Rule 23: A voiceless stop preceding a voiced stop becomes voiced and similarly a voiced stop preceding a voiceless stop becomes voiceless, e.g.

kg	—	gg	pa:taś́a:laku + gade:le:du → pa:taś́a:laggade:le:du 'there is no room for the school'	
td	—	dd	tarva:ta + da:ka → tarva:dda:ka	'till afterwards'
			prati + di → praddi	'everything'
pb	—	bb	kaḍupu +ba:da → kaḍubba:da	'pain in the stomach'
dt	—	tt	ruddu + ta:ru → rutta:ru	'they will throw blame on'
			adi + tappi → attapi	'except that'

Rule 24: A sibilant following /k t/ becomes /c/ and its preceding consonant assimilates with it, e.g.

kš̌	—	cc	kramaś́ikšana → kramasiccana	'discipline'
			laksa → lacca	'lakh'
			utsa:ham → ucca:ham	'enthusiasm'

Rule 25: A /y/ following any consonant gets assimilated with it, e.g.

cy	—	cc	sacyam → saccem	'truth'
jy	—	jj	ujyo:gam → ujjo:gam	'job'
ty	—	tt	mutyam → muttem	'pearl'
dy	—	dd	vidya → vidde	'education'
ny	—	nn	sa:ma:nyanga → sa:ma:nnenga	'normally'
ry	—	rr	ka:ryakrama:lu → ka:rrekrama:lu	'programme'
š̌y	—	šš̌	viš̌yam → viššem	'matter'
sy	—	ss	aksara:syata → aksra:sseta	'literacy'

Rule 26: A /ḍ/ preceding a /l/ or /n/ gets assimilated with it, e.g.

va:ḍini → va:ḍni → va:nni			'him'
vattiḍulu → vattiḍlu → vattillu			'pressures'

Rule 27: An /r/ following /k/ or /b/ assimilates with it, e.g.

laybreri → laybberi			'library'
sakramanga → sakkamanga			'fairly, rightly'

Rule 28: An /s/ preceding /t/ or /d/ assimilates with it, e.g.

ce:stara: ⟶ ce:ttara: 'will you do?'

ra:stun(n)aru ⟶ ra:ttun(n)aru 'they are writing'

silabas + di:sukuṇṭe: ⟶ silabaddi:sukuṇṭe: 'if one takes the syllabus'

Rule 29: An /r/ preceding /n/ or /l/ assimilates with it, e.g.

u:rlu ⟶ u:llu 'villages'

kadurlu ⟶ kadullu 'spindles'

vya:karnam ⟶ vya:kannam 'grammar'

Rule 30: An /h/ preceding a /m/ assimilates with it, e.g.

bra:hmana ⟶ bra:mmana 'brahmin'

Rule 31: A /d/ preceding /j/ assimilates with it, e.g.

idi + je:sinru ⟶ ijje:sinru 'they did this'

adi + janpo:yindi ⟶ ajjanpo:yindi 'it died'

Sarma observes the following vowel assimilations in the data:

Rule 32: /a/ following a /y/ gets palatalised and becomes /e/, e.g.

sa:ma:nyanga ⟶ sa:ma:nnenga 'usually'

aksara:syata ⟶ aksara:sseta 'literacy'

višayam ⟶ viššem 'matter, affair'

ka:ryakrama:lu ⟶ ka:rrekrama:lu 'activities'

Rule 33: /a/ following a /v/ gets rounded and becomes /o/ and /v/ is dropped, e.g.

va:ḍu ⟶ o:ḍu 'he, that male person'

svayanga ⟶ soyenga 'by oneself'

svagra:mam ⟶ sogra:mam 'native village'

praja:sva:myam ⟶ praja:so:mmem 'democracy'

With this analysis of Sarma, we proceed to the next section where it is subjected to a critical review.

6.1.10

Critical Review of Sarma's Analysis

Sarma's (1974) 33 rules of Sandhi are for the Karimnagar district speech of the Telangana dialect. For external and internal Sandhi he has given ten rules each, and 13 rules for assimilation. There seems to be no necessity of so many rules.

Sarma's first four rules deal with vowel Sandhi. A simple syllable initial main stress rule could take care of all of them. His Rule 5 is a sort of mutation in the dialect under consideration. His Rule 6 deals with vowel harmony which, in my view, has no place under Sandhi. Rule 7 deals with Sandhi across word boundaries. My stress rule could accommodate this too.

Rule 8 deserves special attention. When two words enter into Sandhi, the word final vowel of the preceding word is deleted and the word initial consonant of the following word is voiced. Sometimes this may happen even without the loss of the preceding syllable nucleus. However, this voicing of the second word initial voiceless consonant in the utterance marks (i) the word boundary and (ii) a Telangana dialect feature. Sarma observes that a voiceless sound getting voiced before a voiced sound is rare (in Rule 9). I have data to show that it is not only a non-standard feature, but also something which is looked upon with some disfavour by the speakers, considering it more as a Urdu-influenced speech.

Rule 10 can be considered as a sort of mutation in the Telangana dialect.

Sarma's internal Sandhi rules are not in fact necessary in my view. All these rules (cf. 6.1.9) can be summed up in the following way by recognising the function of stress, as proposed by me.

(i) The second syllable nucleus is generally unstressed and lost;

(ii) in words of more than four syllables the third (unstressed) syllable is dropped;

(iii) in a trisyllabic word the final syllable nucleus is lost when followed by a suffix;

(iv) in cases with gemination, the second syllable nucleus which is unstressed, is lost and to prevent a geminate consonant followed by another consonant in sequence, the geminate is reduced to a single consonant.

$$V_1C_1C_1V_2C_2V \rightarrow V_1C_1C_2V- \ ;$$

(v) three consonant clusters of ndr, ndl, gny, rnm are reduced by dropping the middle consonant. What is interesting to note here is that in all the cases the sonorant consonant r, l, y is retained and only the stops or nasals are lost;

(vi) Rules, 16, 17, 18 and 19, 20 of Sarma deal with loss of syllables in toto. In the case of Rules 16, 17, 18 it is the second (unstressed) syllable which is lost. In the case of Rule 19 it is the third syllable and in Rule 20 it is the fourth syllable. However, one thing is clear, that none of these syllables is in stressed position.

Following after his Sandhi Rules 1-20, Sarma gives 13 assimilation rules, 21 - 33.

Rule 21 deals with palatalisation, and 22, 23 deal with assimilation resulting from loss of an unstressed nucleus. Rule 24 discusses the position of ks in the dialect. Rule 25 is again a case of palatalisation with y . Rule 26 mentions retroflexionalisation, whereas Rule 29 illustrates lateralisation. Rule 27 is probably peculiar to the individual speaker and in my data I do not have such forms. Rule 28 is a non-standard feature pertinent not only to the Telangana area but throughout the Telugu speaking area. Similarly Rule 30 is a non-standard phenomenon throughout. Rule 31 is no way different from what has been discussed in earlier rules. Rule 32

is again only a palatalisation process. This example under Rule 32 should have been accara:sseta according to Rule 24. But he never notices it. Rule 33 speaks of /ṟ/ becoming /o/.

From the above it is evident that Sarma has listed the rules uneconomically. One can state them simply under the following headings:

(1) loss of unstressed syllables (as was the case with internal Sandhi forms).

(2) Palatalisation in the environment of palatal consonants and

(3) Consonantal harmony (in cases of retroflexionalisation and lateralisation).

6.1.11

Swarajya Lakshmi's Observations on the Rayalaseema Dialect

Swarajya Lakshmi (1982) gives ten rules for what she refers to as morphophonemic operations in the Cuddapah (Rayalaseema) dialect of Telugu.

1 Stem final vowels [i] (except in disyllables occurring before -lu), [u] and [a] are dropped in close and open junctures.

unṭa:di + anma:ṭa ⟶	unṭa:danma:ṭa	'it will be like that'
apḍu + apḍu ⟶	apḍapḍu	'now and then'
pakka + go:ḍa ⟶	paggo:ḍa	'side wall'
padi + enimidi ⟶	paddenimidi	'eighteen'
naḍucu + ta:mu ⟶	naḍusta:mu	'let us walk'
cu:ḍa + le:mu ⟶	cu:ḷe:mu	'we cannot see'
pada + okoṇḍu ⟶	padokoṇḍu	'eleven'

2 If identical vowels occur at the end of the preceding word and in the initial position of following word, then they coalesce into a long vowel.

udyo:ga + artame ⟶	udyo:ga:rtame
akaḍa + akaḍa ⟶	akḍa:kḍa
aṭla + aṭla ⟶	aṭlaaṭla
unṭu + uṇḍe ⟶	unṭu:ṇḍe

3 A stem final / i/ when followed by word initial /aa/ or /ee/ results in {AA}. (This symbol stands for the vowel [æ:])

tovvi + a:nu ⟶ toVVAAnu[20]

icci + a:nu ⟶ iccAAnu

ca:pala + e:pa:ram ⟶ ca:palAApa:ram

4 (a) Following a word final long vowel, the initial vowel of a word is lost.

po: + aṇḍi ⟶ po:ṇḍi	'you go'
pa:ḍta: + unna ⟶ pa:ḍta:nna	'I am singing'

(b) The long vowel resulting from the application of 4(a) is shortened if it is followed by a geminate consonant.

pa:ḍta:nna > pa:ḍtanna

5 (a) A stem final -s of verbs alternates with y. This rule operates only with imperatives, obligatives and negatives.

to:su > to:s	to:y-i	'push!'
	to:yaṇḍi	'you (pl.) push'
to:su > to:s >	to:ya:li	'you must push'
to:su > to:s >	to:y anu	'I will not push'

(b) C_1VVC_2V alternates with CVC_2C_2V when C_2 is y

to:yi > toyyi

go:yi > goyyi

6 After applying rule 1, a stem final -c of verbs may alternate with -v before obligative, imperative and negative suffixes. It is however optional.

e:ḍcu > e:ḍc > e:ḍv-u	'you cry'
e:ḍcu > e:ḍc > e:ḍv-anu	'I shall not cry'
e:ḍcu > e:ḍc > e:ḍv-a:li	'you must cry'

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20 Swarajya Lakshmi uses -AA- in the examples to indicate the length of the vowel ,æ.

7 (a) After applying rule 1, a stem final geminate in verb forms is simplified to a single consonant before another consonant in close juncture.

tannu > tann > tan-ta	'I shall kick'
vellu > vell > vel-tu:	'while going'

(b) After simplification as mentioned above, the stem final -t is voiced before suffixes with initial dentals.

kottu > kott > kot > kod-ta:mu	'we beat'
kod-tunna	'I am beating'
kod-da:mu	'let us beat'

8 A suffix initial [t] becomes [ʈ] following stems ending in -n.

vin + ta ⟶ vinʈa	'I listen'[21]
un + tu: ⟶ unʈu:	'being'

9 After dropping the final vowel, -c becomes -s before suffixes with initial t-.

vaccu > vac + ta:ɳɖa ⟶ vasta:ɳɖa	'I am coming'
vaccu > vac + ta: ⟶ vasta:	'I shall come'

10 After dropping the final vowel of the preceding word if the consonant is either a nasal or a voiced stop, the following word initial voiceless consonant becomes voiced.

pani + ce:si ⟶ panje:si	
cinigi + po:tadi ⟶ cinigbo:tadi	

In addition to the ten rules given above, Swarajya Lakshmi, proposes two more rules for assimilation. They are considered here. She cites them

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21 The phonetic quality of stem ending -n is not mentioned by Swarajya Lakshmi. See my comment in 6.1.12.

as regressive and progressive assimilations.

(a) Regressive Assimilation:

The final vowel of the stem is dropped as per the rule 1. The stem final consonants thus resulting will assimilate with the following consonants, e.g.

iru ➤ ir + daru ⟶	iddaru	'two persons'
iru ➤ ir + nu:ru ⟶	innu:ru	'two hundred'
ve:ɖi + ni:ɭɭu ⟶	ve:nni:ɭɭu	'hot water'

(b) Progressive Assimilation:

e.g. Vas + ta:ɳɖa ⟶	vassa:ɳɖa	'I am coming'
ra:s + ta:ɳɖa ⟶	ra:ssa:ɳɖa	'I am writing'

6.1.12

Review of Swarajya Lakshmi's Analysis

Swarajya Lakshmi (1982) gives ten rules for what she calls morphophonemic operations for Cuddapah speech of the Rayalaseema dialect of Telugu. All the examples of Swarajya Lakshmi's first rule can be covered by my stress rule. Her second rule brings in a concept of the traditional grammarians. Known as 'Sawarṇa diirgha Sandhi', which means when two similar vowels occur at the Sandhi position the result is a long vowel of the same quality. Swarajya Lakshmi illustrated this rule with examples. This rule applies specifically to the Rayalaseema dialect but not to other dialects, particularly not to the Telangana dialect. The speakers of Telangana have only short vowels in all those contexts. In Telangana speech the stress of the word initial syllable is dropped when it becomes the second part of an utterance, whereas in the case of Rayalaseema speakers, the stress of the word initial syllable of the second word is manifested as a long vowel.

The third rule is a sort of vowel harmony. Rule 4 actually deals with phonological constraints and does not have anything to offer on Sandhi.

Her rule 5 aims at using grammatical criteria to explain the change from 's' to 'y'. Rule 5 (b) is not a Sandhi rule and I prefer to treat it under syllable structure. Rule 6 deals with root variants before different suffix morphemes. Rule 7 is similar to that of Prakasam's Sutra 7. Reduction of consonant gemination and voicing of the word final consonant are treated here. Her rule 8 suggests that present tense suffix is -ta. This initial t-will be ṭ following a nasal consonant according to rule 8 . But it contradicts rule 7 where we find an example tan-ta which according to rule 8 could be tan-ṭa which it is not. Morphological variants are treated as Sandhi forms in her rules. Her assimilation rules are not different in any way from others. So they do not require any special comment.

6.1.13

Sankara Mohan Rao on Coastal Dialect

Sankara Mohan Rao (1983) proposes the following rules under the morphophonemic chapter of his dialect monograph on the Guntur (Coastal) dialect of Telugu. He describes internal Sandhi and external Sandhi under the head of morphophonemics. Under internal Sandhi he deals with plural formation in Telugu, variations in oblique-genitive bases and variations in verb forms. Under external Sandhi Mohan Rao proposes the following rules:

1 Automatic: The loss of final vowel of the first word occurs before a vowel beginning second word.

karra + okaṭi ⟶ karrokaṭi 'one stick'

va:ḷḷu + andaru ⟶ va:ḷḷandaru 'they are all'

gumpu + okaṭi ⟶ gumpokaṭi 'one group'

2 Following a word final vowel of the preceding word, the initial voiceless stop of the second word becomes voiced.

appuḍu + ku:ḍa ⟶ appuḍugu:ḍa 'even then'

taya:ru + ce:yu ⟶ taya:ruje:yu 'to prepare, etc.'

3 Assimilation

k g > gg	oka + gaṇṭa ⟶	agganṭa	'one hour'
t d > dd	prati + de:sem ⟶	pradde:sem	'each nation'
d c > cc	adi + cadivi ⟶	accadivi	'having studied'
kk > gg	appaṭiki + ku:ḍa ⟶	appaṭiggu:ḍa	'even then'

4 Non automatic

Word final vowel is dropped when followed by a consonant initial word.

debbalu + tagulta:yi ⟶	debbaltagulta:yi	'will receive blows'
ne:nu + ku:ḍa ⟶	ne:ngu:ḍa	'I am also'

5 Sporadic

Loss of word initial vowel occurs in the second word when preceded by a word final vowel.

unḍe: + aṭuvanṭi ⟶ unḍe:ṭuvanṭi

6 Initial p- of the second word changes to either b- or v-

nilco: + peṭṭu ⟶ nilco:beṭṭu

nilco:veṭṭu 'made to stand'

7 A glidal -y- occurs in between two vowels in external Sandhi.

ni: + antaṭa ⟶ ni:yantaṭa 'as you are'

6.1.14

Critical Review of Sankara Mohan Rao's Work

Sankara Mohan Rao (1983) under an automatic Sandhi rule cites the loss of word final vowel in Sandhi with another word. Word initial stress is not recognised by him. In fact, word stress is very relevant when the voiceless initial consonant of the second word is voiced in Sandhi. It may be noted that the initial syllable of the second word has lost its stress; it is this loss which results in voicing of the consonant. In the phrase then, the phrase initial syllable will be the stress-bearing one and the word boundary

is indicated by the voiced consonant.

Under assimilation processes Rao gives only four possibilities out of many (see Krishnamurti (1957), 6.1.1.). Krishnamurti and Sankara Mohan Rao discuss the same dialect. Krishnamurti's observations are not supported by Sankara Mohan Rao's data or analysis. His work suggests that over a span of time, this particular dialect lost some assimilation processes. However, my data provides examples for all the types of assimilation processes described by Krishnamurti.

Under automatic Sandhi Sankara Mohan Rao talks of vowel initial second words and under non-automatic Sandhi he talks of consonant initial second words. In my analysis, whether the second word begins with a consonant or vowel is irrelevant to the process. The final vowel of the first word is dropped just the same. My word initial syllable stress rule deals satisfactorily with both cases and there is no need for two separate rules.

Sporadic alternation is mentioned as loss of word initial vowel in the second word when preceded by a word final vowel. There is, in fact, an explanation for it, so it is not really sporadic. In such cases the final vowel of the first word is long, for example,

unḍe: + aṭuvaṇṭi ⟶ unḍe:ṭuvaṇṭi

Long vowels are a manifestation of stress and although the word initial syllable of the second word is also stressed, as a stressed long vowel has precedence over a stressed short vowel, a is lost and e: remains.

Sankara Mohan Rao, next to Prakasam (see 6.1.15), provides fewer rules for Sandhi. Brevity he achieves at the cost of lack of coverage.

6.1.15

Prakasam Attempts at Sandhi Again

Earlier Prakasam (1972) had 19 Sutras of Sandhi (cf. 6.1.5). Now Prakasam (1985) presents a list of examples and then formulates some Sandhi

rules. His examples are given here, and his rules follow.

(1)	ceruku + gaḍa ⟶ ceruggaḍa	'sugar cane'
(2)	perugu + ko:sam ⟶ perukko:sam	'for curds'
(3)	pa:ta + dayyam ⟶ pa:ddayyam	'old ghost'
(4)	su:di + to: ⟶ su:tto:	'with a needle'
(5)	ce:pa + baruvu ⟶ ce:bbaruvu	'weight'
(6)	gu:ba + po:ṭu ⟶ gu:ppo:ṭu	'pain of eardrum'
(7)	gu:ba + mo:gindi ⟶ gu:bmo:gindi	'the eardrum got resonated'
(8)	ko:ṭa + nu ⟶ ko:ṭṭnu	'fort' (accusative)
(9)	ma:ṭa + lo: ⟶ ma:ṭlo:	'in the word'
(10)	baḍi + ni ⟶ bannni	'school' (accusative)
(11)	baḍi + lo ⟶ ba[illegible]o:	'in the school'
(12)	baḍi + lu ⟶ ba[illegible]u	'schools'
(13)	ta:ḍu + lu ⟶ ta:[illegible].u	'ropes'
(14)	pa:ta + ceruvu ⟶ pa:cceruvu	'old tank'
(15)	pa:ta + jalleḍa ⟶ pa:jjalleḍa	'old sieve'
(16)	pa:ta + su:di ⟶ pa:ssu:di	'old needle'
(17)	ko:ta + lu ⟶ ko:talu	'cuttings'
(18)	ko:ta + nu ⟶ ko:tanu	'cutting' (accusative)
(19)	a:ku + nu ⟶ a:kunu	'leaf' (accusative)
(20)	pa:pa +nu ⟶ pa:panu	'baby' (accusative)

Prakasam observes that in forms 1 to 16 Sandhi takes place and in forms 17 to 20 there is no Sandhi. He considers that vowels get deleted between 'certain types of consonants'. After deletion of the vowel the consonants undergo changes. He posits six rules for Sandhi as follows:

Rule 1: A vowel gets deleted when it is placed between two consonants of the same class. (Class for him is on the basis of the articulator.)

pa:la + to:	⟶	pa:lto:	'with milk'
nu:ne + to:	⟶	nu:nto:	'with oil'
ca:ru + to:	⟶	ca:rto:	'with soup'

Rule 2: A vowel gets optionally deleted between an apical continuant and a laminal obstruent (or stop). Prakasam has not provided any example under this because his rule is 'optional' according to the dialect of the speaker.

Rule 3: An obstruent-sibilent complex is reduced to a silibant unit when it is followed by an obstruent.

ka:cu + te: ⟶ ka:ste: 'if boils'

le:cu + te: ⟶ le:ste: 'if gets up'

Rule 4: Non retroflexional apical non-obstruents acquire retroflexionality from the adjacent retroflexional obstruents.

nu:ne + ɖabba: ⟶ nu:nɖabba: 'oil tin'

ku:li + ɖabbu ⟶ ku:lɖabbu 'labour money, wages'

ta:ru + ɖabba: ⟶ ta:rɖabba: 'tar tin'

Prakasam also cites some other forms under this rule where the non-obstruents are the second element of the Sandhi context and the first obstruent gets completely changed.

	R_1	R_4	R_5	
baɖi + ni	⟶ baɖni	⟶ baɖɳi	⟶ baɳɳi	'school' (accusative)
baɖi + lo:	⟶ baɖlo:	⟶ baɖɭo:	⟶ baɭɭo:	'in the school'
baɖi + lu	⟶ baɖlu	⟶ baɖɭu	⟶ baɭɭu	'schools'
ta:ɖu + lu	⟶ ta:ɖlu	⟶ ta:ɖɭu	⟶ ta:ɭɭu	'ropes'

Rule 5: Voiced retroflexional consonants acquire nasality/laterality from the following retroflexionalised nasal/lateral consonants. Prakasam refers to the above examples for this rule.

Rule 6: Laminal obstruents get harmonized with the following laminal obstruent-sibilant complexes and sibilants with reference to the manner of articulation.

Pa:ta + ceruvu $\xrightarrow{R_1}$ pa:tceruvu $\xrightarrow{R_6}$ pa:cceruvu

pa:ta + jalleḍa → pa:tjalleḍa → pa:jjalleḍa

pa:ta + su:di → pa:tsu:di → pa:ssu:di

Prakasam views the Sandhi contexts from the articulator's point of view. He considers that the articulations that follow have a dynamic function to fulfill, i.e. they can change the adjacent sound (generally the preceding one).

6.1.16

Analysis of Prakasam's Recent Work

Prakasam (1985) proposes a set of six rules to describe Sandhi in modern Telugu. At the outset he gives data comprising twenty examples and states that 1-16 undergo Sandhi process, whereas 17-20 do not. His rules do not offer any new information, but deserve full appreciation for their brevity, although, unfortunately at the cost of incompleteness. He does not seem to give a rule to cover voicing and voicelessness of his examples 1-7. He does not include in his list examples for rule 3 and 4.

Prakasam observes that vowel deletion in Sandhi does not take place in cases of t-l, t-n, k-n and p-n (examples 17-20 respectively) and that this is due to the types of consonant involved. His Sandhi rules are articulator based. Below is his articulator-oriented classification of Telugu consonants.

labials: p b m v

laminals: t d s[22] c j s ś ʂ

apicals: ṭ ḍ n ṇ l ḷ r

dorsals: k g

The examples that are listed in 17-20 have the following classes of sounds as per his analysis.

t - l, t - n } laminal - apical

22 It seems that this 's' is a misprint as 's' appears with 'ś' and 'ʂ' at the end of the line. (Prakasam, 1985: 4)

k - n : dorsal - apical

p - n : labial - apical

An articulator-oriented classification for the consonants does not seem to offer any advantage because it cannot account for all Sandhi rules. Prakasam does not provide any data for his rule 2. There is thus no evidence for it. In a place and manner oriented classification his general rules would seem to be clearer and more economically expressed.

(i) Sandhi can take place between two stop sounds. Examples can be found in Prakasam's data.

(ii) In Sandhi stop sound is always in C_2 position and C_1 can be any other like lateral, trill, sibilant, etc. Examples are,

pa:la + ḍabba:	⟶ pa:ḷḍabba:	'milk can'
ga:julu + jata	⟶ ga:juljata	'pair of bangles'
va:ru + to:	⟶ va:rto:	'with them'

(iii) Retroflex stops can occur in C_1 position when followed by nasal or lateral. For example,

baḍi + ni	⟶ baṇṇi	'school' (accusative)
go:ḍa + lu	⟶ go:ḷḷu	'walls'

Dental stops can occur in C_1 position when sibilants are in C_2 position. For example,

pa:ta + jalleḍa	⟶ pa:jjalleḍa	'old sieve'
pa:ta + su:di	⟶ pa:ssu:di	'old needle'

These rules exclude the possibility of Sandhi when C_1 is a stop and C_2 is a nasal or lateral, i.e. Prakasam's examples 17 to 20.

The general rule also includes another characteristic of C_1C_2. If C_2 is a stop and C_1 any other consonant other than a stop, it must be

(a) a case of 'internal Sandhi' developed by loss of an unstressed vowel - which is a feature of unsophisticated speech; and/or

(b) a borrowed feature from neighbouring languages.

6.2.0

Plural Formation and Sandhi - Consonantal Harmony

Plurals of noun forms in Telugu are derived in several possible ways. The plural marker (or morpheme) is invariably -lu. This -lu has been noted by all scholars as a plural suffix. Every Telugu noun is described as having two allomorphic shapes. The first one is considered as a basic stem which is also the nominative singular. The second allomorph is that with a plural suffix, which is identified as nominative plural. There are some nouns in which there is no difference in the basic stem form of the nominative singular and plural, for example,

basic stem	gloss	plural form
a:wu	'cow'	a:wulu
anna	'elder brother'	annalu
kurci:	'chair'	kurci:lu
peṭṭe	'box'	peṭṭelu

In most of the noun forms the nominative plural is somewhat different. For example,

pustakam	'book'	pustaka:lu
pani	'work'	panlu
katti	'knife'	kattulu
paṇḍu	'fruit'	paḷḷu
ceyyi	'hand'	ce:tulu
peḷḷi	'marriage'	peḷḷiḷḷu

Plural formation in Telugu has been treated by many scholars and all of them have considered it under Sandhi phenomena. Many noun stem changes are involved when the plural suffix -lu is added.

Krishnamurti and Gwynn (1985) in their A Grammar of Modern Telugu propose eight Sandhi rules for stem function with -lu, which I consider here.

Of innumerable treatises on Telugu plural formation I select their work for the reason that it is the latest work and incorporates, in essence, everything up to date. Krishnamurti and Gwynn's Sandhi rules are now presented together with their examples.

Rule 1: Stem final [i/u] preceded by [T, NT or ND] [23] is lost before the plural suffix -lu . Stem final [i/u] means [i] or [u] occurring at the end of the basic stem

basic stem	gloss	nominative plural
ko:ṭi	'ten million'	ko:ṭlu
co:ṭu	'place'	co:ṭlu
poraba:ṭu	'mistake'	poraba:ṭlu
toṇṭi	'hip'	toṇṭlu
baṇṭu	'soldier'	baṇṭlu
baṇḍi	'cart'	baṇḍlu
		baḷḷu
paṇḍu	'fruit'	paṇḍlu
		paḷḷu
guṇḍu	'bullet'	guṇḍlu
		guḷḷu

Rule 2: In all stems ending in [Di, Du, lu] and [ru] and in stems of more than two syllables ending in [li] and [ri] the final syllable[24] becomes L before Lu

basic stem	gloss	plural
baḍi	'school'	baḷḷu
guḍi	'temple'	guḷḷu

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23 Capital letters are used to represent retroflex consonants.

24 They should have noted it as second syllable (or final syllable) consonant. 'Syllable', I assume cannot be L .

basic stem	gloss	plural
na:ɖu	'day'	na:ɭlu
peraɖu	'backyard'	peraɭlu
manamaɖu	'grandson'	manamaɭlu manamalu
tammuɖu	'younger brother'	tammuɭlu
ka:lu	'leg'	ka:ɭlu
kunde:lu	'hare'	kunde:ɭlu
mailu	'mile'	maiɭlu
pensilu	'pencil'	pensiɭlu
pantulu	'schoolmaster'	pantuɭlu
u:ru	'village'	u:ɭlu
pe:ru	'name'	pe:ɭlu
wa:kili	'doorway'	wa:kiɭlu
mangali	'barber'	mangaɭlu
pandiri	'canopy'	pandiɭlu

The following exceptions to Rule 2 of Telugu plural noun formation are noted by Krishnamurti and Gwynn:

Exception 1: Masculine nouns of Sanskrit origin ending in [Du] replace [Du] by [lu] to form the plural. For example,

Sne:hituɖu	'friend'	sne:hitulu

They note that a large number of nouns belong to this class.

Exception 2: Loan words from foreign languages ending in [r(u)] form the plural by adding [lu] to the basic stem, for example,

naukar[u]	'servant'	naukarlu
mo:ṭa:r[u]	'motor car'	mo:ṭa:rlu
ba:ki:da:r[u]	'creditor'	ba:ki:da:rlu

Rule 3: Stem final [TTi/TTu, DDi/DDu] becomes [T, D] before [Lu].

basic stem	gloss	plural
puṭṭi	'a measure of grain'	puṭlu
ceṭṭu	'tree'	ceṭlu
reḍḍi	'a Reddi' (caste name)	reḍlu
guḍḍu	'egg'	guḍlu
ro:ḍḍu	'road'	ro:ḍlu

Rule 4: Stem final [llu, nnu] following a short vowel becomes [ND] or [L] before [Lu].

basic stem	gloss	plural
illu	'house'	iṇḍlu illu
mullu	'thorn'	muṇḍlu
villu	'bow'	viṇḍlu
kannu	'eye'	kaṇḍlu kaḷlu
pannu	'tooth'	paṇḍlu paḷlu
cannu	'breast'	caṇḍlu caḷlu

The following stems in [nnu] are exceptions to this rule as shown:

pannu	'tax'	pannulu
vennu	'ear of corn'	vennulu
ponnu	'iron ring'	ponnulu
junnu	'cheese'	junnulu
ṭannu	'a tonne'	ṭannulu
tannu	'beating'	tannulu

Rule 5: Stem final [am/a:m] is replaced by [aa] and stem final [em] is replaced by [EE][25] before the plural suffix [lu].

basic stem	gloss	plural
pustakam	'book'	pustaka:lu
gurram	'horse'	gurra:lu
kaṣṭam	'difficulty'	kaṣṭa:lu
peṇḍa:m	'wife'	peṇḍa:lu
peḷḷa:m	'wife'	peḷḷa:lu
pandem	'bet; race'	pandEElu
paḷḷem	'plate'	paḷḷEE:lu

Rule 6: Stems ending in [a:yi] form the plural in the regular way by adding [lu]. These forms have more than two syllables.

basic stem	gloss	plural
abba:y(i)	'son; boy'	abba:y(i)lu
amma:y(i)	'girl; daughter'	amma:y(i)lu
ru:pa:y(i)	'rupee'	ru:pa:y(i)lu

Rule 7: Stem final [yi/yyi] is replaced by [tu] before [lu]; the vowel preceding [tu] is always long.

basic stem	gloss	plural
ceyyi / ce:yi	'hand'	ce:tulu
goyyi / go:yi	'pit'	go:tulu
nuyyi / nu:yi	'well'	nu:tulu

Only these three nouns make up this class.

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25 This symbol corresponds to the low front long vowel [æ:].

Rule 8: In cases not coming under rules 1, 2, 3, 6, or 7, where the stem ends in [i] then,

(a) if the stem consists of only two syllables, or if it consists of more than two syllables and the vowel in the middle syllable(s) is other than [i], final [i] changes to [u] before [lu]; e.g.

basic stem	gloss	plural
ba:wi	'well'	ba:wulu
sanci	'sack, bag'	sanculu
pilli	'cat'	pillulu
puli	'tiger'	pululu
ra:tri	'night'	ra:trulu
		ra:tri(u
sangati	'circumstance'	sangatulu

(b) if the stem consists of more than two syllables and the vowel in the middle syllable(s) is i , all the non-initial i's change to u's, e.g.

manisi	'person'	manusulu
kolimi	'forge'	kolumulu
muliki	'point'	mulukulu
enimidi	'eight'	enumudulu
		enimidulu

In nouns of Sanskrit origin [i] in the middle syllable generally does not change, e.g.

atithi	'guest'	atithulu
paridhi	'limit'	paridhulu
samiti	'association'	samitulu
		samutulu
pratinidhi	'representative'	pratinidhulu

The following nouns have been listed by Krishnamurti and Gwynn as not conforming to any of the rules:

basic stem	gloss	plural form
ra:yi	'stone'	ra:llu
poyyi	'hearth'	poyyilu poyilu
pendli pelli	'marriage'	pendlindlu pellillu
wari	'paddy'	wadlu
-ga:ru	'(honorific suffix)'	-ga:rlu
-sa:ri	'time'	-sa:rlu
kuma:rudu	'son'	kuma:rulu kuma:llu
eddu	'bullock'	eddulu edlu
weyyi	'thousand'	we:lu
ce:nu	'field with a crop'	ce:lu
pe:nu	'louse'	pe:lu
ka:di	'yoke'	Kandlu ka:llu
e:du	'year'	e:ndlu e:llu
ji:taga:du	'servant'	ji:taga:ndlu ji:taga:llu
alludu	'son-in-law'	allundlu allullu
manamara:lu	'grand-daughter'	manamara:ndlu manamara:llu
cellelu	'younger sister'	cellendlu cellellu
ku:turu	'daughter'	ku:tundlu ku:tullu

basic stem	gloss	plural form
kodawali	'sickle'	kodawandlu
		kodawalu
ra:tri	'night'	ra:trilu

6.2.1

Critical Analysis of Krishnamurti and Gwynn's Work

Before presenting my own analysis of plural formation for the same data, I give a critical analysis of Krishnamurti and Gwynn's work.

Krishnamurti and Gwynn at the outset start with the description of such plural forms where there is no change in the basic stem after adding plural suffix -lu. The examples they cite, give a clue to the reason why the noun stems do not change before plural suffix -lu but they do not seem to have noted it. The examples cited by them are as follows and the phonetic clues are considered below.

Basic stem	Gloss	Nominative Plural
a:wu	'cow'	a:wulu
anna	'elder brother'	annalu
kurci:	'chair'	kurci:lu
pette	'box'	pettelu

A stressed vowel is not lost in the Sandhi context and length of the vowel is one of the manifestations of stress. That is the reason for kurci: being retained even after adding plural suffix -lu. e never participates in Sandhi. For example,

ga:re + lu ⟶	ga:relu	'a cake dish'
ginne + lu ⟶	ginnelu	'metal vessels' (cf. 5.2.2.1)
bharine + lu ⟶	bharinelu	'toilet box'
bodipe + lu ⟶	bodipelu	'bruises'

Hence pette will not change its basic stem form before -lu suffix.

The general rule in Telugu plural formation is that all the nouns which have the following canonical forms do not undergo any change in the basic stem before plural suffix -lu. (Note that final syllable of the basic stem is not -C$_{(y)}$).

(C)V CC V	anna	'elder brother'	annalu
	gadda	'boil'	gaddalu
(C)V:CV	ga:ju	'bangle'	ga:julu
CV: CV:	pe:ci:	'trouble'	pe:ci:lu

Basically, Krishnamurti and Gwynn have far too many rules, and then an equally good number of exceptions to the rules are listed. This type of analysis makes the whole issue complicated. Their rules 1 and 2 require a single rule which covers retroflexion and lateralisation (see 6.2.2). Under Rule 4 they cite some exceptions. These exceptions can be covered by the general rule of word structure referred to above. In the instances cited under exceptions to the rule, one finds that oblique or genitive forms are derived by adding the suffix yokka to the basic stem whereas in other cases there is a change in the basic stem itself. For example,

Basic stem	gloss	genitive/oblique stem	gloss
pannu	'tooth'	panti	'of the tooth'
pannu	'tax'	pannu yokka	'of the tax'

In modern Telugu speech yokka as genitive or oblique suffix is dropped and in a phrase it is understood in its absence. For example,

pannuba:dha	'tax problem'
pantiba:dha	'tooth ache'

Hence, it is concluded that in modern Telugu pannu in nominative singular is homophonous and has two meanings, and it is necessary for an individual to acquire them separately. It is also observed that the exceptional forms are to be pronounced with geminate consonants, whereas in

the case of others it is optional. For example, one may pronounce either in isolation or in compound the following forms:

illu	ilu	'house'	ilu ce:ru	'to reach home'
mullu	mulu	'thorn'	mulu guccukonnadi	'thorn pierced'
villu	vilu	'bow'	vilu vidya	'archery'
kannu	kanu	'eye'	kanu reppa	'eyelid'
cannu	canu	'breast'	canuba:lu	'breast milk'

In the case of the exceptions it is not possible. -nnu/-llu is a must and it will be followed by -lu in the plural.

Under Rule 8 (a) they have listed sanci and its plural form as sanculu. I am clear that there is another free variant form in the standard speech in sanci: with a final long i: . This will conform to my rule and remains as sanci:lu in plural. Other additional examples are

go:ci:	'loin cloth'	go:ci:lu
wa:ci:	'watch'	wa:ci:lu

It is to be noted here that if it is short i in word final position it undergoes harmony with the suffix vowel. If it is long vowel i: then there is no harmony. This explanation would clear all the instances cited by Krishnamurti and Gwynn under Rule 8 (a) and (b), except the loan words which differ.

6.2.2

A New Analysis of Plural Formation

The shape of the plural suffix (i.e. whether it is [-lu] or [-ɭu]) and the way it is linked to the noun stem is explained by reference to the structure of the noun stem. There are no monosyllabic stems. The Prosodies and symbolizations are described in Section 1.3.0

There are two ways in which the suffix may be linked to the stem:

Type (1) By loss of the final vowel of the stem with retroflexion, with or without lateralisation of the final consonant of the stem and the initial

consonant of the suffix. The stem final vowel is C.[26] The suffix has the shape [-lu]. Prosodies: R and L are involved.

Type (2) By retention of the final vowel of the stem and without retroflexion and lateralisation. The suffix has the shape [-lu]. Prosodies: R and L.

Type 1: Junctions of this type are as follows (Prosodies: R and L).

Disyllabic stems

(i) (C)VCL The systems of final C are L, G and P. For example,

ka:lu + lu	⟶	ka:llu	'legs'
CV̄LL + LL^{w}		CV̄L^{LR}L L^{w}	
u:ru + lu	⟶	u:llu	'villages'
V̄LL + LL^{w}		V̄L^{LR}L L^{w}	
ra:yi + lu	⟶	ra:llu	'stones'
CV̄G$_{t}$L + LL^{w}		CV̄G$_{t}^{LR}$L L^{w}	
badi + lu	⟶	balu	
CVP$_{t}$L + LL^{w}		CVP^{LR}L L^{w}	

(ii) (C)VC^{g}C Prosodies: The systems of C^{g}C are P$_{t}$P$_{t}$ and LL.

In stems of this structure the final CV, that is, C as well as V, is lost as a cluster of three consonants is not permissible in Telugu. Only retroflexion but not lateralisation marks the junction. (Prosody R only).

putti + lu	⟶	putlu	'measure of grain'
CVP$_{t}$P$_{t}$L + LL^{w}		CVP$_{t}^{R}$L L^{w}	
reddi + lu	⟶	redlu	'reddy, a caste'
CVP$_{t}$P$_{t}$L + LL^{w}		CVP$_{t}^{R}$L L^{w}	
illu + lu	⟶	illu	'houses'
VLLL + LL^{w}		VL^{R}L L^{w}	

26. But see tetra-syllabic stems with -t.

mullu + lu ⟶ mu|lu 'thorns'

CVLL|+L|ᵂ CV|ᴿ|ᴸL|ᵂ

Trisyllabic stems: Lateralization and retroflexion

CVCV|+L| systems of final C are P|. For example,

de:wudu + lu ⟶ de:wu|lu 'gods'

C|̄C|V P|+L|ᵂ C|̄C|V |ᴸᴿ|L|ᵂ

peradu + lu ⟶ pera|lu 'backyards'

CVCV P|+L|ᵂ CVCV|ᴸᴿ|L|ᵂ

CVC|̲CVC systems of final C is L. For example,

pandiri + lu ⟶ pandi|lu 'canopies'

CVCC V L|ʸ+L|ᵂ CVCC|ʸ |ᴸᴿ|L|ᵂ

Tetrasyllabic forms:

(C)VCVCV|̄ P|+L| Only retroflexion prosody is extended, as in

poraba:tu + lu ⟶ poraba:t|u 'mistakes'

CVCV C|̄ᵛ P|+L|ᵂ CVCV C|̄ᵛ P|ᴿ|L|ᵂ

alawa:tu + lu ⟶ alawa:t|u 'habits'

VCVC|̄ᵛ P|+L|ᵂ VCVC|̄ᵛ P|ᴿ|L|ᵂ

CVCVCV|̄ P|+L| Retroflexion and lateralisation extended.

manamadu + lu ⟶ manama|lu 'grandsons'

CVCVCV|̄ P|+L|ᵂ CVCVCV|ᴸᴿ|L|ᵂ

ji:taga:du + lu ⟶ ji:taga:|lu 'servants'

C|̄CVCVC|̄ P|+L|ᵂ C|̄CVCV|ᴸᴿ|L|ᵂ

Type 2: Stem structures having junction of the second type, namely, with retention of stem final vowel and without retroflexion and lateralisation are of the types given below. The plural suffix has the shape [-lu]. The stem final vowel may be ɑ, ɛ or |. Where the stem final vowel is | there is w prosodic harmony of plural suffix and stem final syllable unless |ʸ is preceded by G| or the final syllable has the prosody of long length |̄ʸ. Prosodies are R and L.

Disyllabic structures

(C) VC-(ɑ/ɛ/ɭ). Systems at final C are L and P excluding the term P_t when final V is ɭ.

CVLɑ	kala + lu ⟶	kalalu	'dreams'
	CVLɑ + Lɭ^{w}	CVLɑLɭ^{w}	
$C\bar{V}L\varepsilon^{y}$	ci:re + lu ⟶	ci:relu	'sarees'
	$C\bar{V}L\varepsilon$ + Lɭ^{w}	$C\bar{V}L\varepsilon$ Lɭ^{w}	
$CVP_t\bar{ɭ}$	gadi + lu ⟶	gadulu	'rooms'
	CVP_tɭ^{y} + Lɭ^{w}	CVP_tɭ^{w} Lɭ^{w}	
$\bar{V}P_k$ɭ	a:ku + lu ⟶	a:kulu	'leaves'
	$\bar{V}P_k$ɭ^{w} + Lɭ^{w}	$\bar{V}P_k$ɭ^{w} Lɭ^{w}	
$\bar{V}P_t$ɑ	a:ṭa + lu ⟶	a:ṭalu	'plays'
	$\bar{V}P_t$ɑ + Lɭ^{w}	$\bar{V}P_t$ɑLɭ^{w}	

(C) $VC^{g}C$ - (ɑ/ɛ/ɭ). Systems at $C^{g}C$ are P, N, L and G. P_t is excluded when final V is ɭ.

$CV^{v}PP_{tt}$ɑ	gadda + lu ⟶	gaddalu	'boils'
	$CV^{v}PP_{tt}$ɑ + Lɭ^{w}	$CV^{v}PP_{tt}$ɑLɭ^{w}	
$CV^{v}PP_{tt}$ɑ	sotta + lu ⟶	sottalu	'dents'
	$CV^{v}PP$ɑ + Lɭ^{w}	$CV^{v}PP$ɑLɭ^{w}	
$CV^{v}PP_{tt}$ɛ	pette + lu ⟶	pettelu	'boxes'
	$CV^{v}PP_{t}$ɛ + Lɭ^{w}	$CV^{v}PP_{t}$ɛ^{y} Lɭ^{w}	
$CV^{v}PP_{tt}$ɭ	muddu + lu ⟶	muddulu	'kisses'
	$CV^{v}PP_{t}$ɭ + Lɭ^{w}	$CV^{v}PP_{t}$ɭ^{w} Lɭ^{w}	
$CV^{v}PP_{tt}$ɭ	katti + lu ⟶	kattulu	'knives'
	$CV^{v}PP_{t}$ɭ + Lɭ^{w}	$CV^{v}PP_{t}$ɭ^{w} Lɭ^{w}	
$V^{v}PP_{tt}$ɭ	eddu + lu ⟶	eddulu	'bulls'
	$V^{v}PP_{t}$ɭ + Lɭ^{w}	$V^{v}PP_{t}$ɭ^{w} Lɭ^{w}	
$CV^{v}PP_{tt}$ɭ	ettu + lu ⟶	ettulu	'moves' (in chess)
	$V^{v}PP_{t}$ɭ + Lɭ^{w}	$V^{v}PP_{t}$ɭ^{w} Lɭ^{w}	
CVNNɭ	pannu + lu ⟶	pannulu	'taxes'
	CVNNɭ^{w} + Lɭ^{w}	CVNNɭ^{w} Lɭ^{w}	
CVNNɛ	ginne + lu ⟶	ginnelu	'vessels'
	CVNNɛ^{y} + Lɭ^{w}	CVNNɛ^{y} Lɭ^{w}	

CVLLᵅ pilla + lu ⟶ pillalu 'children'

CVLLᵅ + LU CVLLᵅ LU

CVLLᴱ purre + lu ⟶ purrelu 'skulls'

CVLLᴱ + LU CVLLᴱU LU

CV GG ᵘ poyyi + lu ⟶ poyyilu 'hearths'

CVGGᵢU + LU CVGGᵢU LU

CVGGᵅ gawwa + lu ⟶ gawwalu 'shells'

CVGGᵅ + LU CVGGᵅ LU

Cᵅ$\overset{g}{C}$C (ᵅ/ᵗ) The systems at $\overset{g}{C}$C are NP, LP, and LL.

CV NPᵅ panṭa + lu ⟶ panṭalu 'crops'

CVNPᵅ + LU CVNPᵅ LU

baṇḍa + lu ⟶ baṇḍalu 'rocks'

CVNPᵅ + LU CVNPᵅ LU

CVNPᵅ banka + lu ⟶ bankalu 'gums'

CVNPᵅ + LU CVNPᵅ LU

CVNPᵘ banti + lu ⟶ bantulu ('balls')

CVNPU + LU CVNPU LU

CVLPᵘ kharcu + lu ⟶ kharculu 'expenses'

CVLPU + LU CVLPU LU

darji: + lu ⟶ darji:lu ('tailors')

CVLPᵘ + LU CVLPᵘ LU

kurci: + lu ⟶ kurci:lu 'chairs'

CVLPᵘ + LU CVLPᵘ LU (loan word)

Trisyllabic structures

CV CV C.ᵘ System of final C is $S_ṭ$

CVCV $S_ṭ$ᵘ manuṣi + lu ⟶ manuṣulu 'men'

CVCU$S_ṭ$U + LU CVCU$S_ṭ$U LU

Tetrasyllabic structures

VCVCVCᵘ Systems of final C are P excluding $P_ṭ$.

enimidi + lu ⟶ enumudulu 'eights'

VCU CU $P_ṭ$U + LU VCU CU $P_ṭ$U LU

Stems of different lengths with -aw̃

The stem final -aw̃ which has resulted in modern spoken Telugu by reduction of classical form -mu forms the main area of this rule. As mentioned in Section 3.2.2.1 under rule 7 of the stress rules, this -aw̃ carries stress. The whole syllable is nasalised. When -lu suffix is added to such nouns which end in a nasalised syllable, the nasalisation is dropped before -lu and the V is lengthened in order to compensate for the loss of nasalisation. For example,

pustakaw̃ + lu	⟶	pustaka:lu	'books'
ve:gaw̃ + lu	⟶	ve:ga:lu	'speeds'

This type of nasalisation replacement by vowel length is not only in case of occurrence before -lu suffix, but also before -niki (case marker for the accusative) suffix.

pustakaw̃ + ni + ki	⟶	pustaka:niki	'to the book'
peḷḷa:w̃ + niki	⟶	peḷḷa:niki	'to the wife'

Prakasam in his 19th Sutra (cf. 6.1.5) has rightly observed this phenomenon.

The nouns borrowed from Sanskrit have -ḍu in final syllable in the nominative singular and it is replaced by -lu in the plural. For example,

kuma:ruḍu	'son'	kuma:rulu
vi:ruḍu	'warrior'	wi:rulu

6.2.2.1

Analysis of Exceptions

The exceptions listed by Krishnamurti and Gwynn are in fact not exceptions to the rules. As I mentioned elsewhere (cf. 5.1.10.2) the understanding of the present situation can only be complete when we understand the past. I explain the exceptions as shown below.

(1) ra:yi 'stone' + lu ⟶ ra:llu

In old Telugu the plural form for ra:yi is noted as ra:lu .

ra: is the morph with meaning 'stone'.

ra:lu + lu ⟶ ra:llu.

The plural form by overconscious speakers had a second plural suffix added to it. Similarly we find another example in

ra:tri + lu ⟶ ra:trillu, ra:trullu 'night'

In this case ra:tri + lu ⟶ ra:trulu/ra:trilu was the first stage. Later

ra:trulu + lu ⟶ ra:trullu.

Thus, these are hyperforms in modern Telugu.

(2) -garu + lu ⟶ ga:rlu 'honorific (suffix)'

-sa:ri + lu ⟶ sa:rlu 'time (suffix)'

It is to be noted that both the above forms are only suffixal in nature and never do they occur independently in the utterance. They do not therefore follow the usual rule, as for instance,

go: ru + lu ⟶ go:llu 'finger nails'

but not *ga:ru + lu ⟶ ga:llu is not possible.

ga:ru + lu is always ga:rlu.

(3) kuma:ra is a borrowed lexical item from Sanskrit. My explanation 6.2.2.3 will cover these forms.

(4) The noun form wari is a borrowed lexical item from Sanskrit vrhi$_c$. The borrowed form added Telugu plural suffix -lu and speakers later thought that the form with -lu suffix is plural whereas the one without -lu is singular. As such 'paddy' and such other things are considered as all time plural forms (uncountables) (e.g. milk in English). In modern Telugu wari occurs as an adjective.

(5) The original form in old Telugu for weyyi 'thousand' happens to be ve: as in

ve:ma:ru 'thousand times'

Based on we: the plural form we:lu came into usage, and is still retained in modern Telugu. There is no logic in deriving or at least attempting to derive we:lu from weyyi .

(6) Now only the forms ʧe:nu 'field' and pe:nu are left unaccounted for of these and it is possible to consider [tse:nu] on the following lines.

ʧe:nu 'field' ʧe:lu 'fields' -lu is pl. suffix

ʧe:lo: 'in the field' -lo: is locative suffix

ʧe: then corresponds to 'field' in the above morphemic analysis. But this explanation is not sufficient to prove the theory. And as such we do not have such evidence available in the case of pe:nu . So I prefer to consider these two forms as exceptional cases.

Thus of the 21 forms cited by Krishnamurti and Gwynn as exceptional cases of Sandhi in plural formation, I am able to deal with some under the regular rules of plural formation and the remainder by taking into account the early forms of the language, and only two forms remain as real exceptions.

It is not claimed that this analysis is exhaustive. There may be additional C systems in the structures that have not been included. Checking against more data is needed to provide a complete account.

6.2.3

New Proposal for Sandhi Rules

I Internal Sandhi

Internal Sandhi for the purposes of this thesis is defined as loss of an intervening vowel between two consonants within morpheme boundaries. Such a loss of intervening vowel is due to lack of stress of that syllable. In Telugu, it is observed that in a trisyllabic or tetrasyllabic word, the second syllable is generally unstressed, and is lost. This gives rise to

new consonant clusters in the language. For example,

Coastal dialect

'palaka	> 'palka	'slate'
'maḍata	> 'maḍta	'fold'

Rayalaseema dialect

'We͡nuka	> 'wenka	'adv. behind, earlier'
'tirapati	> 'tirpati	'Tirupati, name of a town'

Telangana dialect

'ɯaraku	> 'ɯarku	'till then'
'panikira:du	> pankira:du	'of no use'

The examples cited above are from data which represent informal fast speech of the dialect under consideration.

II External Sandhi

External Sandhi is defined as Sandhi which takes place across morpheme boundaries. Sandhi takes place at the junction of the unstressed final syllable of the first morpheme and the initial stressed syllable of the second morpheme. Rules are given to account for the changes that take place. These rules exclude plural formation which has been dealt with separately (cf. 6.2.2).

Rule 1

Unless a consonant cluster (or geminate) precedes, the final syllable nucleus of the first morpheme is lost, if it is short, whether the second morpheme begins in a vowel or a consonant. This is the most general rule. It involves the stress prosody.

'Wa:du + 'ekkaḍa	⟶	'wa:ḍekkaḍa	'where is he?'
'CV̄ CV + 'V́CCVCV		'CV̄CV́CCVCV	
'a:me + 'ewaru	⟶	'a:mewaru	'who is she?'
'V̄CV́ + 'V́CVCV		'V̄CV́CVCV	

'ma:ṭa + 'ra:du ⟶ 'ma:ṭra:du 'lit. words won't come (i.e, cannot speak)

'CV̄CV + 'CV̄CV 'CV̄C$_1$CV̄CV

'gula:bi + 'mogga ⟶ 'gula:bmogga 'rose bud'

'CVCV̄CV + 'CVCCV 'CVCV̄C$_1$CVCCV

'gula:bi: + 'mogga ⟶ 'gula:bi:mogga 'rose bud'

'CVCV̄CV̄ + 'CVCCV 'CVCV̄$_1$CV̄'CVCCV

Rule 2

Where rule 2 applies, if the final consonant of the first morpheme is voiced and the initial consonant of the second morpheme (which is in a stressed CV syllable) is voiceless, voicelessness spreads to the preceding consonant. The reverse is also true. In other words, the stressed syllable onset of the second morpheme dictates the pattern. This is only in cases where plosives come together. V and V̲ prosodies are involved.

'munaga + 'ka:ḍa ⟶ 'munakka:ḍa 'drumstick'

'CVCV^{V}PV + '^{V}PV̄CV 'CVCV$^{\underline{V}}_{PP}$V̄CV

'oka + gaṇṭa ⟶ 'ogganṭa 'one hour'

'V$^{\underline{V}}$PV + '^{V}PVCCV 'V$^{V}_{PP}$VCCV

Rule 3

If one of the consonants at the word boundary is a retroflex stop, retroflexion spreads to the other consonant. This is noted as retroflexion prosody. For example,

'nu:ne + 'ḍabba: ⟶ 'nu:nḍabba: 'oil tin'

'CV̄N$_t$V + 'P$_t$VCCV̄ 'CV̄N^{R}PVCCV̄

It is necessary to note that the other consonant which is not a retroflex belongs to either nasal or liquid group only. For example,

'to:lu + 'ṭo:pi: ⟶ 'to:lṭo:pi: 'fur cap'

'CV̄L$_t$V + 'P$_t$V̄CV̄ 'CV̄L^{R}PV̄CV̄

'pa:lu + 'ḍabba: ⟶ 'pa:lḍabba: 'milk can'

'CV̄L$_t$V + 'P$_t$VCCV̄ 'CV̄L^{R}PVCCV̄

Rule 4

This rule is a reversal of rule 3. Under this rule it is retroflexion and lateralisation or nasalisation prosody which are observed. If C_1 is a retroflex stop and C_2 is a nasal or lateral this rule applies. For example,

'pa:ḍu + 'nu:ne ⟶ 'pa:ṇṇu:ne		'bad oil'
'CV̄ P_tV + 'N$_t$V̄CV 'CV̄ P^{NR}N V̄CV		
'mu:ḍu + 'nelalu ⟶ 'mu:ṇṇellu		'three months'
'CV̄ P_tV + 'N$_t$VCVCV 'CV̄ P^{NR}NVCCV		
'mu:ḍu + 'lekkana ⟶ 'mu:ḷḷekkana		'at the rate of three'
'CV̄ P_tV + 'L$_t$VCCVCV 'CV̄ P^{LR}LVCCVCV		
'jaḍa + 'la:gu ⟶ 'jaḷḷa:gu		'pull the braid' (imperative)
'CV P_tV + 'L$_t$V̄CV 'CV P^{LR}LV̄CV		

Rule 5

If the word final syllable consonant of the first morpheme is a dental (voiceless or voiced) stop, and the initial consonant of the second morpheme is a palatal affricate, the palatalisation spreads to the preceding consonant. This is relevant to Coastal dialect only. Palatalisation prosody is involved.

'pa:ta + 'ceppulu ⟶ 'pa:tceppulu		'old shoes'
'CV̄^{V} P_tV + $^{V'}P_c$VCCVCV 'CV̄^{V} $P^{C}P$VCCVCV		
'ra:ti + ja:ḍi: ⟶ 'ra:dzdza:ḍi:		'stone jar'
'CV̄^{V} P_tV + $^{V'}P_c$V̄CV̄ 'CV̄ $^{V}P^{C}P$V̄CV̄		

Rule 6

In Sanskrit Sandhi rules if the final syllable nucleus of the first morpheme and initial syllable nucleus of the second morpheme have the same V grade, and are short, the junction of V+V is realised as $\overline{V}$. This phenomenon extends to Telugu in borrowed vocabulary from Sanskrit, also as reported by Swarajya Lakshmi (cf. 6.1.11). Some speakers of the Rayalaseema dialect extend this type of Sandhi to Telugu vocabulary. Her data provides examples for both the types. For example,

'udyo:ga + artame: ⟶ udyo:ga:rtame: (< Sanskrit udyo:ga:rthame:)

'VCCV̄CV + VCCV CV̄ VC CV̄ CV̄ CCV CV̄

'untu + unde ⟶ untu:nde

'VCCV + VCCV VCCV̄CCV

This is the prosody of long length.

This small set of rules covers all the types of Sandhi which are discussed by earlier scholars. There is little room for exceptions when these rules are strictly adhered to. The rules also lead to a simpler analysis of plural formation in Telugu which is a complicated process and offers a problem for which scholars have in the past provided several rules. However by providing a different set of rules for plural forms and for Sandhi forms, I am able to deal with the problem more economically. These rules should prove very useful for pedagogical purposes.

CHAPTER SEVEN

REGIONAL AND SOCIAL DIALECTS OF TELUGU: PROBLEMS OF STANDARDISATION

7.0.1 Introduction

Language exhibits variation within its geographical limits. This is an accepted fact and is in no way a modern discovery. Indian grammarians recognised this fact as early as the third century BC. They also mention the use of different linguistic varieties by the same person in different social situations, which in modern linguistic terminology is considered under stylistic variations or diglossia. Patanjali, an ancient Indian grammarian of the first century BC, observes this phenomenon in Sanskrit. Social variations which include all kinds of differences in speech correlating with socio-economic class, caste, occupation and age within the same geographical region have been considered in Indian language situations by several scholars, for instance, Gumperz (1958), Ramanujan (1967), Pandit (1972), Southworth (1976, 1977), and others.

Concluding his treatise on 'language', Bloomfield observes that there exists a relationship between language and social status. He is of the opinion that the acquisition of social status can be achieved by manipulation of language. He states,

> The background of our popular ideas about language is the fanciful doctrine of the eighteenth-century "grammarians"....It is no accident that the "grammarians" arose when they did. During the eighteenth and nineteenth centuries our society went through great changes; many persons and families rose to relatively privileged positions and had to change from non-standard to standard speech.
>
> (Bloomfield 1933:496-7)

The situation obtaining in Telugu is in no way different. As I mentioned earlier in the Introduction (cf. 1.6), I take McConnell's (1979)

definition of dialect for defining Telugu dialects. The definition includes regional and social variations.

7.1.0

Diglossia

Different languages are commonly assigned different tasks in multilingual societies. Many sociolinguists have traced multilingualism as having its origins in colonisation and forced federation of the indigenous people. A good example of this can be found in Paraguay, a country in South America which was a colony of Spanish intruders, and India, a British colony in South Asia.

Different varieties of the same language are used by the speakers to cater for the needs of different social functions. The relationship between language form and social function is studied under the phenomenon known as diglossia. The original French word, diglossie, was used by the French linguist Marçais. It was later adopted and used in English by Charles Ferguson (1959).

Ferguson, in his classic work on diglossia, draws the attention of sociolinguists to the fact that speakers of a particular language often use more than one language variety, one in one kind of circumstance and another variety under other conditions. He also observes that these two varieties of language exist side by side throughout the community, 'with each having a definite role to play' (Ferguson 1972:232). The use of two different varieties of the same language Ferguson distinguishes as different from (i) the use of a standard language and regional dialect, and (ii) the use of two distinct languages throughout a speech community, each with a clearly defined role.

Ferguson (1972) considers four speech communities and their languages - Arabic, modern Greek, Swiss-German and Haitian Creole - and explains diglossia under nine rubrics: function, prestige, literary heritage, acquisition, standardisation, stability, grammar, lexicon and phonology.

Ferguson illustrates the difference between standard language and dialect use and diglossia from Italian and Persian. In these languages speakers use their local dialect at home or among family or friends of the same dialect area, whereas they switch over to standard language while communicating with speakers of other dialects or on public occasions. He states that diglossia is not assumed to be a stage which occurs always and only at a certain point in some kind of evolution, say for example, in the language standardisation process. He observes that diglossia in Arabic goes back to times immemorial and the superposed classical Arabic has remained relatively stable. The Greek situation is slightly different. The roots of diglossia in Greek can be traced back to many centuries, but it stabilised only in the nineteenth century, when a literary Greek came into existence after borrowing vastly from the classical variety. Swiss-German diglossia is the outcome of long religious and political isolation from the German centres of standardisation. Haitian Creole is developed from creolisation of pidgin French, where standard French was accepted as a superposed variety. Ferguson, for the convenience of reference, labels the superposed variety in diglossia as High variety (H) and the regional dialects as Low variety (L), and then discusses the important features of diglossia. These are summarised below, and will be used as a basis for analysis of diglossia in Telugu in later parts of this thesis.

1. Function

H and L have different specialisation of function. They both have

different sets of situations of use and overlapping is observed very rarely. In Arabic, H is classical Arabic, the language used in the Koran, and L refers to various colloquial forms of Arabic, which are different from one Arab country to the other. In Greek, H is known as kantharévusa (corresponds to 'puristic' in English), and L is called dhimotiki (or demotic). Demotic Greek, as the name implies, is the spoken language of the common people and puristic Greek is a kind of Greek with certain features borrowed and restored from the classical language. In German-speaking Switzerland, H is considered as standard German and the numerous Swiss-German dialects are considered as L. French is recognised as H in Haiti, whereas French-based Haitian creole is given the status of L. Ferguson states that there are situations in which only H is appropriate, and others in which only L can be used. There is very little overlapping and the functional distribution of H and L is very clear. H includes only such functions which are definitely formal and cautious. L includes only such functions which are informal, domestic and relaxed.

Ferguson lists all typical situations in which the two varieties are distinguished.

Situation	H	L
Sermons in church	X	
Instructions to subordinates		X
Personal letter	X	
Speech in parliament, political speech	X	
University lecture	X	
Conversation in intimate circle		X
News broadcast	X	
Radio 'soap opera'		X
Newspapers, editorials, captions	X	
Caption on political and other cartoons		X
Poetry	X	
Folk literature		X

2. Prestige

Most of the speakers in diglossic communities believe that H is the superior and more elegant form of the language. They sometimes feel that what they speak is not a language at all. There are others who believe that L is inferior and is non-existent. This particular group of speakers will be using L in all the situations mentioned above, but fail to recognise that they are using it, or probably do not want to recognise the fact. They have a high regard for H and feel that for certain elevated functions it is appropriate to use H only. They do not consider the point of intelligibility as a criterion for the choice of dialect in such situations.

3. Literary Heritage

Ferguson clarifies that in at least three test cases that he selects, there is considerable literature in H which is appreciated by the L language speakers. The only exception to this is the case of Greek. In these three cases contemporary literary work in H is considered as prestigious and looked upon as a continuation of a laudable tradition. This H tradition may be distant from the contemporary society. The contemporary literary production in H may use some vocabulary, phrases etc. of earlier forms.

4. Acquisition

The acquisition patterns of H and L dialects is very interesting to observe. Right from early childhood children are exposed to L variety because their contacts with other people are only through L. Thus they learn L without being conscious of it. H is the form of language which the children learn after gaining substantial control

over L. Generally, the acquisition of H is through formal schooling. This acquisition pattern of H has two typical effects. As the number of drop-outs from early school education is a regular phenomenon in most parts of the world, some people may not acquire H at all. They will be communicating only in L. Apart from this, those who learn H may not be in a position to use it with the same degree of fluency that they exhibit in L. The simple reason for lacking fluency in H is that H is acquired by learning some principles of grammar, etc., in a way similar to foreign language learning. L is in regular day-to-day use by speakers, so they gain a high degree of fluency.

Well-educated people in a diglossic community can present the rules of H-grammar, but they cannot do the same for L-grammar. Although they are unable to present any rules of L-grammar, they unconsciously apply the rules of L-grammar in their normal speech and wherever it is functional. This may not be the case in H-grammar. Speakers, when asked, would respond by saying that L has no grammar and L-speech is the direct result of the inability of some speakers to follow the rules of H-grammar.

5. Standardisation

The H form of the language is generally standardised by means of formal codification. Various approaches in the form of dictionaries, grammars, pronunciation manuals, books of rules for correct usage, etc., are made to impart the H instruction. The orthography and spelling rules for H are already in existence and well-established. There may not be much variation. L. may not have any studies of this type. This may be because people think either that L is non-existent, or that L is just

a corrupt form of H. If there are any such codifications available for L, then it is very likely that they are products of scholars from other languages. Nobody would venture to write in L because usually no spelling system is evolved for it.

6. Stability

Diglossia is typically a stable phenomenon and may even continue to exist for centuries. In Arabic, a kind of spoken variety, used in semi-formal or cross dialectal situations, has a highly classical vocabulary. It also has certain features of classical syntax. In Greek a kind of mixed language has become appropriate due to the role played by the press. The tension between H and L in diglossia is reduced by the development of a mixed, intermediate form, which shares the features of both H and L. Borrowing H vocabulary into L is very common, and the reverse of it is less usual, but not ruled out.

7. Grammar

The grammatical structure of H and L may be strikingly different. Ferguson's definition of diglossia requires that H and L be forms of the same language, but the differences in grammatical structures of H and L are vast. It is noticed that the grammatical simplicity of L is the major characteristic feature which separates it from H. The grammar of H is definitely more complex.

8. Lexicon

Generally the bulk of the vocabulary is shared by both H and L varieties. H may sometimes have technical terms and learned expressions for which there may not be equivalent vocabulary items in L. In turn L may have terms which are of local importance or for households objects, etc., for which H may not have suitable forms.

Interestingly enough, sometimes the existence of paired items, one for H and another for L, is also noticed. Ferguson notes that in the diglossic situation the H forms may be written and L forms used in speech only.

9. Phonology

H and L phonologies may differ in varying degrees. They may be fairly close as in Greek, or moderately different as in Arabic or Haitian creole, or strikingly different as in Swiss-German. Ferguson at this point, in accordance with the phonemic theory rules available to him in 1959, justifies the need for two systems. He states that the sound systems of H and L constitute a single phonological structure of which L-phonology is the basic system and the divergent features of H-phonology are either a subsystem or parasystem.

After discussing the above-mentioned nine features of diglossia, Ferguson proposes a full definition of diglossia (Ferguson 1972:245):

> Diglossia is a relatively stable language situation in which, in addition to the primary dialects of the language (which may include a standard or regional standards), there is a very divergent, highly codified (often grammatically more complex) superposed variety, the vehicle of a large and respected body of written literature, either of an earlier period or in another speech community, which is learned largely by formal education and is used for most written and formal spoken purposes but is not used by any sector of the community for ordinary conversation.

This definition makes it clear that H and L are to be taken as varieties of the same language and under no circumstances can they be separate languages. H and L are not linguistically identical and they cannot be treated as different styles or registers. Compared with L, H is very different. Another interesting observation of Ferguson is that the diglossic pair is 'in addition to the primary dialects of the language' (ibid.).

He clearly states that H is not used in conversation by any sector of the community. Fasold (1984) observes this point as crucial for distinguishing diglossia from a standard dialect with regional dialects.

7.1.1

Fishman's (1967) Views

Joshua Fishman (1967) in his original paper 'Bilingualism with and without diglossia; diglossia with and without bilingualism', revises and expands the concept of diglossia. Fishman proposes that diglossia and bilingualism are to be carefully distinguished and separately studied. Bilingualism, he believes, is the subject matter which deals with the ability of an individual to use more than one language variety. It is the concern of psychologists and psycholinguists.

Diglossia, he defines, deals with the distribution of more than one language variety to serve different communicational tasks in a society. It is the concern of sociologists and sociolinguists.

Fishman attempts to modify the original proposal of Ferguson. He argues that in the cases where only two language varieties exist, the importance of situations is less significant. According to his definition, the term bilingualism means control of both H and L throughout the society, whereas diglossia refers to the functional distribution of H and L.

In a society to be considered as a speech community with both bilingualism and diglossia, each speaker of the community is expected to know both H and L, and these varieties may have such a distribution as to qualify as diglossia. Fishman cites the example of Paraguay (which is considered by many sociolinguists as their field). The Guarani language of that country serves as the L language and the Spanish language as the H

language. This example of Fishman brings out the fact that the languages in question may be far apart linguistically, but still be in diglossic relationship.

Two different groups of speakers within a single political or religious or economic entity may present a case of diglossia without bilingualism. One of the groups may be dominant and use the High language. The other, which may incidentally be the larger group, may not have any power in the society and uses the Low language. This sort of situation will not be found in any speech community, for the reason that the two groups cannot interact unless they use interpreters or a pidgin language.

Bilingualism without diglossia, according to Fishman, is the situation where in a speech community there are large numbers of bilinguals who do not restrict the use of a particular language to a particular situation. They use both languages for any purpose. He observes that such communities exist during major changes in diglossic relationships and are extremely unstable (Fishman 1972:105). He attributes the development of bilingualism without the diglossia feature to the factor of a leaky diglossia. Leaky diglossia is the case where one variety leaks into the functions which are usually reserved for the other. As a result of bilingualism without diglossia, a new variety which is a mixture of old H and L varieties may come into existence. If H and L are structually similar it would result in a new variety, as mentioned above, and if H and L are structurally dissimilar, one may be replaced by the other.

The fourth pattern which is logically possible, according to Fishman, is neither bilingualism nor diglossia. Fishman is prepared to accept even stylistic differences under his label diglossia.

7.1.2

Questions Raised by Fasold (1984)

Ferguson wants to distinguish diglossia from the relationship between standard languages and regional dialects. He also distinguishes the diglossia-like distribution between unrelated languages or distantly related languages. Fishman has nothing special to offer about regional dialects. He mentions that more than two varieties may be used for specific functions in a speech community, but does not consider this under diglossia. Ferguson restricts himself to the discussion of two language varieties. Both Ferguson and Fishman agree on the fundamental point of functional distribution in a speech community - where the H variety is used for formal purposes and L for less formal, personal purposes.

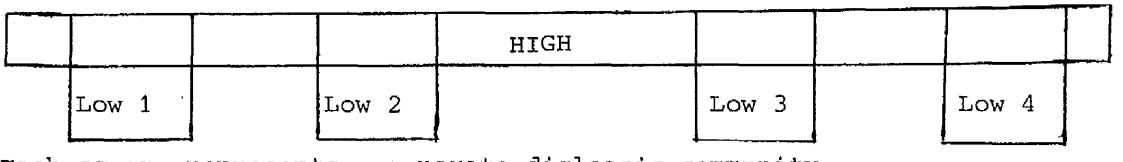
Fasold (1984), after discussing the definitions of Ferguson and Fishman, raises four questions which are the direct result of the definitions: (i) Is diglossia to be distinguished from standard languages with their dialects?; (ii) Is diglossia to be restricted to the distribution of only two language varieties?; (iii) Is diglossia to be understood as applying only to the intermediate degree of linguistic relatedness specified by Ferguson, or may it apply to any degree of relatedness whatsoever?, and (iv) What is the exact nature of social functions which H and L varieties are associated with? Fasold, in a detailed and thought-provoking study, tries to answer these questions himself, before finally providing an extended definition for diglossia. I present a brief summary of his analysis.

a) Standard-with-dialects

Speakers of regional dialects in some languages use their local dialect and standard language exactly parallel to the diglossia

situation. Standard dialect is used to communicate with the speakers of other dialects or when it is a prestigious occasion. Local dialect is used in informal and personal situations. Ferguson takes into account this relationship, which may be considered on a par with diglossia. Ferguson is content with the fact that H is not used by any speaker of the speech community for ordinary conversations. In the standard-with-dialects situation, Ferguson points out that the standard is often similar to the variety of a certain region or social group (e.g., Tehran Persian, Calcutta Bengali) which is used in ordinary conversation by members of the group and as a superposed variety by others. This establishes that as long as there is a group of speakers who use H in ordinary informal conversations, in spite of having other groups who do not use it, it cannot be treated as a case of diglossia. We may have to treat it as a condition of standard-with-dialects. In this connection, Fasold feels that 'speech community' has to be defined suitably.

Fasold, before attempting a definition of 'speech community' defines the diglossic community. A diglossic community is a social unit which shares the same High and Low varieties. Each speech community thus must not only share H variety but also the same L. variety. Fasold observes that several communities share the same H but are distinguishable by their L varieties. He illustrates the situation with an example from German-speaking Swiss communities. The situation would be

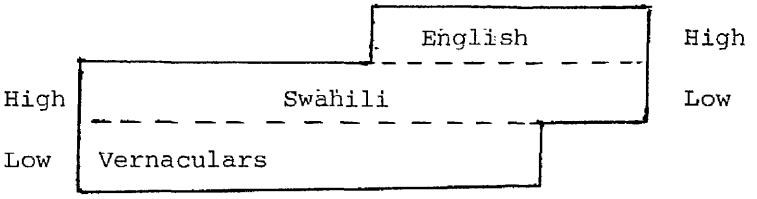


Each square represents a separate diglossic community.

b) The Binarity Question

Is diglossia to be restricted to the distribution of only two language varieties? For answering this question, Fasold examines three different types of multiple language 'polyglossia'.

Double overlapping diglossia has been noted in Tanzania by Abdulaziz Mkilifi (1978). He describes this situation as triglossia, with a cautiously worded note. He describes it as a 'situation of intersection between two developing diglossia situations, one involving Swahili and some vernacular and the other involving Swahili and English' (quotations from Fasold 1984:45). This intersection overlapping diglossia Fasold identifies as double overlapping diglossia.



Tanzania is a former British colony, Tanganyika, which after becoming independent, federated with Zanzibar. Just as in all such other colonies, there are innumerable sociocultural groups with a colonial language at their head. The lingua franca of the area is Swahili, which is currently acquiring the status of a national language. Swahili functions as the H language, with Tanzanian vernaculars as Lows, and it also functions as Low with English as High.

Double-nested diglossia is observed in a rural village, Khalapur, north of Delhi, and is described by Gumperz (1964). Fasold states that Gumperz has not used the term but it would suit the situation obtaining there well. The High variety is Hindi and Low is a local dialect, which the speakers claim as Khalapur variety. (It is reported by Gumperz that for census purposes speakers have claimed Hindi as their

language. Linguistically speaking, the differences between Hindi and Khalapur variety are of a minor nature in phonology, grammar and lexicon. These differences are just on the lines of what Ferguson accepted in diglossic situations.

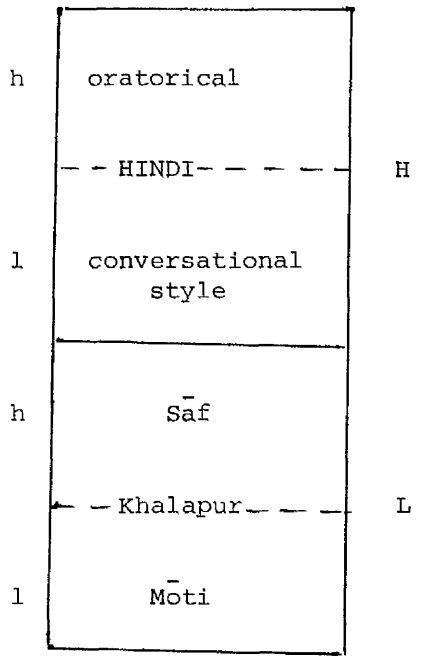
Khalapur is spoken by everyone in the village and is used freely in day-to-day communications. Hindi is a superposed language which is learnt in school or by other contacts. Hindi is used for political or commercial dealings.

The interesting feature brought to light by Gumperz is that Khalapur village has a second level of diglossic relationship, both in High and Low varieties.

Khalapur variety has two subvarieties known as Mōti (lit., coarse, rough) variety, and Sāf (literally, soft, smooth) variety. Mōti variety is used in communications with family members and friends who are in the intimate circle of the speaker. Sāf variety is used in conversations with less well-acquainted persons and distant relatives. Sāf variety is slightly more like Hindi in its linguistic features.

There are two varieties of Hindi used by the speakers in the village. Gumperz has labelled them as conversational and oratorical styles. Oratorical style uses Sanskrit loan words and consonant clusters. It is restricted to more formal functions. Conversational style Hindi is generally the spoken style of Hindi in the village. Conversational style is somewhat intelligible to the speakers, whereas oratorical style is extremely difficult for them to understand. It is reported by Gumperz that a lecturer is obliged to explain parts of his lecture

(which happens to be in oratorical style) in conversational Hindi or in Sāf Khalapur variety.



Linear polyglossia is the third type of multiple language polyglossia situation which Fasold describes. The example that he has selected belongs to English-educated Chinese communities in Singapore and Malaysia described by Platt (1977). The situation is not relevant for my discussion of diglossia, hence I do not need to deal with it.

c) Relatedness Question

Ferguson's definition of diglossia insists on an intermediate level of linguistic relatedness between clearly separate languages and also style shifting.

Fasold suggests that the speech of the individuals reflects the intimacy or formality of the situation in question. Speakers may resort to subtle stylistic shifts within the same language, or may switch between

two moderately distinct dialects. The other possibility is that they may shift to an altogether different language. Fasold states that it is very difficult to divide the styles on any principle.

d) Everyone Agrees with Regard to the Function of Diglossia

H and L varieties have clearly defined functions. There may be some overlap between H and L, and if there is substantial leakage of H or L varieties into the functions of the other, this is a sign of a breakdown of the diglossic relationship. Only function remains unchallenged.

Fasold's Definition

Fasold sums up his analysis. Ferguson's definition excluded the functional distribution of two separate languages in diglossia. It also does not take into account standard versus regional dialects. Implicitly Ferguson deals with only two language varieties which are moderately divergent. Fishman expanded the definition to include both closer and more distant degrees of language relatedness and went a step further in stating that the functional distribution of languages found in diglossia need not involve only two languages. Fasold discusses the limitations of Ferguson's and Fishman's definitions. He gives his own definition as follows:

> Broad Diglossia is the reservation of highly valued segments of a community's linguistic repertoire (which are not the first to be learned, but are learned later and more consciously, usually through formal education), for situations perceived as more formal and guarded; and the reservation of less highly valued segments (which are learned first with little or no conscious effort), of any degree of linguistic relatedness to the higher valued segments, from stylistic differences to separate languages, for situations perceived as more informal and intimate.
>
> (Fasold 1984:53)

7.2.0

Situation Obtaining in the Telugu-speaking Area (with reference to Ferguson's Theory)

Having surveyed the works of Ferguson, Fishman and Fasold,in this section I present the situation which currently exists in Andhra Pradesh. I will deal with the salient features of the three scholars' work here.

Speakers of the Telugu language often use more than one variety, depending on the situation. Two varieties of language exist side by side (and Ferguson observes in this connection that the situation is different from use of a standard language and a regional dialect, cf.7.1.0) and one need not be a standard language variety.

In Telugu, as already discussed, we have three regional dialects - Telangana, Coastal and Rayalaseema. From the data that I have there is no evidence to prove that a situation as described by Ferguson exists in the Telangana or Rayalaseema dialects. The Coastal dialect, however, provides data in favour of the theory. I present the following data as per the frame suggested by Ferguson.

1. Function

High variety and Low Variety have different functions in the Coastal dialect of Telugu, in keeping with the definitions given by Ferguson. The High variety, however, has to be bifurcated into two groups (deviating from that of Ferguson) to suit the situation as (i) written classical, High I, and (ii) modern written, High II. The written classical variety is the one which only exists in traditional writings and is not spoken by any one particular group as 'language under use'. Only educated speakers, under certain circumstances, resort to this variety in writing and speech. The written modern variety is the one which is nearer to educated speech of the Coastal region. The

language spoken by the Coastal region educated speakers is considered as spoken standard by many Telugu scholars. The functions of H and L are shown in Table 3.

2. Prestige

Speakers of the Telugu language consider the High I variety as superior to other varieties. At the same time the speakers would consider its use in situations other than those given in Table 3 as hyper standardisation. Low variety is different for each dialect. The duality of high variety is an interesting feature.

3. Literary Heritage

The Telugu language has written literature dating back to the eleventh century AD. The contemporary literary production in the High II variety is certainly rich. Irrespective of the dialect to which they belong, most writers switch over to this variety because the mass media is controlled by the speakers of this variety. Sometimes the vocabulary, and phrases of the earlier classical variety of High I, may be included.

4. Acquisition

Children learn the High I variety through formal education; they also have to learn the High II variety in order to be able to use the language in functions shown in Table 3. This, as language planners noted, results in psychological problems. Andhra Pradesh State has experienced the results of such psychological problems since its inception.

5. Standardisation

As noted by Ferguson, there are some set rules for High variety pronunciation. These rules are common to I and II varieties (see

also 7.5.0). Grammar, however, is totally different. High I has some bookish classical verb conjugations. High II has the modern spoken forms of Telugu. Again, High II grammar is different from that of other regional dialects. Vocabulary is somewhat different between High I to High II. Low variety has no common rules for pronunciation or grammar. Each dialect has its own rules. Vocabulary has a vast range of difference. Standard 'Low variety' may arise sometimes as 'regional standard'.

6. Stability

Diglossia in Telugu is typically stable and has continued for some centuries. The classical style of Telugu (popularly known as graanthika bhaaṣa) is still used in schools and colleges. The proponents of modern colloquial style (popularly known as wyawahaarika bhaaṣa) have been trying strenuously for its replacement, but are only partially successful (see 1.1.8).

7. Grammar

The grammatical structures of High I and High II are different. The Low variety differs from the High variety in general and is simpler.

8. Lexicon

This aspect of Ferguson's diglossic features is not totally shared by High and Low varieties of Telugu. The High variety has a large proportion of Sanskrit elements in it, whereas the Low variety consists of regional traits and, in some cases, with an admixture of Urdu borrowings. Technical terms in modern Telugu are mainly Sanskrit-based. High variety forms in general may be replaced by Low variety forms in some cases. Paired items from High and Low varieties exist only in the Coastal dialect educated speech (which is considered by many as standard) and they are used by speakers freely.

TABLE 3 : Diglossia in Telugu

Situation	High[1]		Low
	I	II	
Sermons in temple, etc.	X		
Instructions to subordinates			X
Personal letter		X	
Speech in parliament, political speech	X	X	
University lecture		X	
Conversation in intimate circle		X	
News broadcast		X	
Radio, TV skits		X	
Newspaper editorial		X	
Caption on cartoons, etc.			X
Poetry	X		
Folk literature			X
(Examination answer (scripts	X		
(Textbooks at school[2]	X		

1. High I and High II exist simultaneously
2. These are not included by Ferguson.

9. Phonology

Ferguson's proposal of two phonological systems, one each for High and Low varieties, is applicable to the Telugu language. In fact, Krishnamurti and Sjoberg have taken social variables into consideration and defined the phonological systems as parasystems of the variables.

Firth (1948) is the pioneer in the field to propose the need for two or three phonological systems for Telugu. Ferguson's theory supports the Firthian philosophy.

7.2.1

Diglossia and Bilingualism

Fishman (1967) in his expanded theory of diglossia, warns us that diglossia and bilingualism are to be carefully distinguished and separately studied.

After the formation of the separate State of Andhra Pradesh, many people migrated to Hyderabad (which forms a part of the Telangana area) and settled there. Thus two different dialect speakers of the same language came into regular contact with each other. This situation has given rise to a peculiar position in the Telugu language.

1. A speaker of dialect A acquired the features of B and is able to communicate in both A and B. This particular type of speaker need not be from only Coastal or only Telangana areas. Both dialect speakers are in good numbers.) This is what Fishman identifies as 'bilingualism'.
2. Some groups of speakers consider that their dialect is superior to the other and so observe bilingualism with diglossia. They

restrict their own dialect for all H uses and the other dialect for L uses. We observe this in the speech habits of Coastal immigrants to the Telangana dialect area.

During the 1950s and later, it was a bilingualism with diglossia situation which existed in the Telugu-speaking areas of Hyderabad. On the other hand, Telangana speakers present another situation. They also practise bilingualism with diglossia, but for a different reason. In communicating with Coastal speakers they use that dialect, and in all other cases they adhere to their own Telangana dialect.

7.2.2

Fasold's Theory Applied to Telugu

Ferguson distinguishes the diglossia-like distribution between correlated languages or distantly related languages. In the case of the Chittoor and Cuddapah districts of the Rayalaseema area, a sort of diglossia-like situation exists between Telugu and Tamil (which is also a Dravidian language). In Anantapur district of Rayalaseema, a diglossia-like situation continues between Telugu and Kannada (also a Dravidian language).

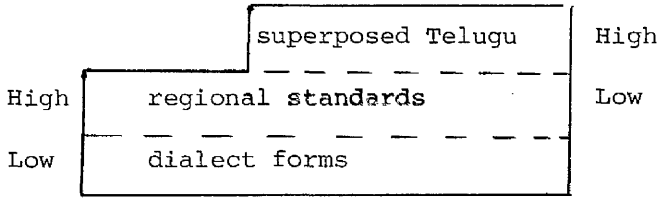
In the entire Telangana area a similar situation exists between Telugu and Urdu, the language which is totally unrelated to Telugu. This situation is now fading away due to the use of Telugu as the medium in education. With this language situation as background, let us now look into Fasold's observations.

1. Standard-with Dialects

Ferguson states under this heading that standard language is often similar to a certain regional group or social group. Members of that particular group use it in ordinary day-to-day speech, but all others use it as a superposed variety. Telugu scholars who recognise Coastal-educated speech as standard Telugu, are of the clear opinion that it is

used by the speakers in normal conditions. According to Ferguson's definition of diglossia then, the situation that obtains in Telugu is not diglossic, but one of 'standard with dialects'. Supported by my data I am not in a position to accept the Coastal educated speech as the standard form of Telugu, and reasons are given in the following sections.

Fasold's definition of 'speech community' will not accommodate a language like Telugu. Neither H variety nor L variety is commonly shared by the groups. This is because aside from the Coastal dialect area, in two other dialect areas there exists a double overlapping diglossia, as shown below.



Superposed Telugu has certain differences from regional standards. Regional standards differ marginally from dialect forms (rustic and others). Dialect forms of speakers in Telangana and Rayalaseema can be traced back to old Telugu as far as lexicon is concerned. The sentence structure and grammar are in conformity with old Telugu. Regional standards, on the other hand, have some influence of locally dominant neighbouring languages, but all the speakers look to the superposed variety when they move out of their dialect area.

Fasold's definition of broad diglossia may be applied to Telugu in order to cover all aspects of linguistic situation. Broad diglossia, according to Fasold, reserves the highly valued segments of a community's repertoire. This repertoire is learnt consciously, usually through formal education. This formal acquisition of language leads to standard pronunciation.

7.2.3

Standard Pronunciation

This is a very difficult concept to explain. Traditional scholars believe that whatever is recorded in a dictionary is the correct pronunciation. There are some people who believe that the formal speech of the educated speakers serves as a model for standard pronunciation. In the following sections I present an account of scholarly views on this topic.

7.2.3.1

Standard Pronunciation - Jones

The problem of standard pronunciation discussed by Daniel Jones (1956) in his introduction to his English pronouncing dictionary is considered here as a point of departure for my arguments. Jones states thus:

> ...that a dictionary is a record of facts, not of theories or personal preferences. No attempt is made to decide how people ought to pronounce, all that the dictionary aims at doing is to give a faithful record of the manner in which certain people do pronounce.
>
> (Jones 1956:xvi)

He labelled the form of speech as 'received pronunciation' (RP). He explains that he has chosen to 'record' this type of English because he found it to be easily understood in English-speaking countries. He is clear in his statement when he observes that he did not regard RP as 'intrinsically better or more beautiful than any other form of pronunciation'. Discussing further the problem of standard pronunciation, he states:

> I have no intention of becoming either a reformer of pronunciation or a judge who decides what pronunciations are good what are bad. My aim is to observe and record accurately, and I do not believe in the feasibility of imposing one particular form of pronunciation on the English-speaking world. I take the view that people should be allowed to speak as they like. And if the public wants a standardised prouniciation, I have no doubt that some appropriate standard will evolve itself.
>
> (passim, xvi)

7.2.3.2

Haas

W. Haas in his editorial introduction to Standard Languages Spoken and Written (1982) takes note of the views of Daniel Jones (1956), but disagrees with him. Haas expresses the belief that evidently a standard does not evolve by itself. Whether they like it or not, phoneticians, grammarians and lexicographers exert a decisive influence on what eventually counts as received or accepted by the speakers. Haas deals at length with the descriptive endeavour and prescriptive use that is made as a consequence of linguistic research. He then states,

> Not only were the grammars designed for practical purposes - to help with the interpretation of important texts, with operations of logical reasoning, with skills of persuasion, or with the teaching of the language to foreigners; but by serving such purposes they were bound to contribute to the maintenance of linguistic norms and to the establishment of standards.
>
> (Haas 1982:2-4)

Hass considers standardisation as an intrinsic feature of the use of language and when an attempt is made to describe the language, the linguist is trying to describe the utterances that are or may be heard in a community as 'uses of language', thus trying to seek or extract its standard. Haas quotes Bloomfield (1927) who in his study of Menomini Indians of Wisconsin, lists the problems that he encountered for fixing a standard form of the language. Bloomfield had to resort to an explicit written standard; at this juncture, he says 'This may be a generally human state of affairs, true in every group and applicable to all languages, and the factor of standard and literary language versus dialect may be a super added secondary one' (cf. Hockett, ed., 1970:152, 154, 156).

Haas observes that the speech community is completely homogeneous. The variations may be from speaker to speaker, context to context, and

situation to situation. As long as these variations are accounted for under a shared inventory of phonological and grammatical elements, the basic identity of a language is untouched.

Haas discusses the 'superposed standards' and their existence in languages. In a close-knit community linguistic differentiation is a problem. He observes thus, 'It is potentially disruptive: as different local or social loyalties attach themselves to differences of language, they may become a threat for the less articulate sense of national cohesion' (Haas 1982:20).

Haas quotes Haugen who, under the above circumstances, calls for language planning (Haugen 1972). This planning, according to Haugen, can be completely informal and ad hoc, but it can also be organised and deliberate. This language planning may be undertaken by private individuals, or may be official. The deliberate attempt here, Haas states, is the adoption of a standard written language. His main concern is with written language as a vehicle of standardisation. He argues for the written language to be allowed to compete with various varieties of spoken forms in similar uses, in a broad overlap of their functions. He then states,

> If the common written language is used only for certain official and higher purposes - in legal proceedings, administration, church, public rhetoric and more elevated literary work - while the various vernaculars are not only first languages but continue to be the only forms of language used in all the more familiar contexts and in ordinary conversation: then a superimposed norm and the colloquial norm of any one of the various vernaculars will be insulated from one another; there will be no contrast between them and therefore no decision in favour of one or the other.
>
> (Haas 1982:24)

7.2.4

Superposed Standards in Telugu

Bearing in mind Haugen's language planning and Haas's superposed standards (cf. 7.2.3.2), we shall look at the situation obtaining in the Telugu language.

Telugu is a language belonging to the Dravidian language family, but because of the constant patronage of kings in its earlier periods it was under the influence of the Sanskrit language, which belongs to the Indo-Aryan language familiy. While retaining its grammatical structure and syntax, Telugu has borrowed a good percentage of Sanskrit vocabulary. It is to be noted here that this borrowing has not affected the basic core vocabulary and verb forms. However, certain noun forms are borrowed from Sanskrit and by the addition of the suffix -incu, Telugu has derived verbs.

Sanskrit	Telugu Noun	Telugu Verb	Gloss
gaurava	gauravam	gauravincu	'to respect'
pre:ma	pre:ma	pre:mincu	'to love'
ko:pa	ko:pam	ko:pincu	'to be angry'

The nouns of Sanskrit when borrowed into Telugu added a suffix, the suffix being the nominative case. There are four such nominative suffixes. They are:

-du for pronominal forms

-mu for abstract nouns

-wu for inanimate nouns

-lu for plural nouns.

Of the above four types of nouns only the second type (abstract nouns) can derive verbs by addition of the -incu suffix.

Telugu literature which came into being with Mahabharata, in the eleventh century AD, contains native Telugu forms, and the majority of the vocabulary is in Sanskrit borrowed forms. Writers since that time adopted a classical written style for the phonological morphological and syntactic forms in Telugu.

Old Telugu Sounds

In addition to the modern Telugu vowels and consonants, old Telugu script provides evidence for this. These include C (ardhānuswāra = half zero phonetically akin to a nasal sound) and ः (visarga = Skt. form occuring in borrowed vocabulary, phonetically akin to voiceless glottal fricative h̥). Besides these, the classical Telugu syllabary also recognises the difference between palatal affricates and palatal stops. Two different types of [r] have been recognised for classical Telugu. Originally in Dravidian languages there was a distinction between two [r] sounds. Malayalam and some varieties of Tamil even now retain this distinction. It existed in old Telugu, whereas it has been lost in modern Telugu. Old Telugu has a vocalic r̥, and also palatal and velar nasals.

Old Telugu Morphology

The problem of classical style is acute here. Some of the classical forms (or old Telugu forms) are completely different from those of modern Telugu.

Old Telugu	Modern Telugu	Gloss
finite		
ce:yucunna:nu	ce:stunna:nu	'I do'
veḍalucunna:ḍu	veḷtunna:ḍu	'he is going'
koṭṭucunna:ḍu	koḍutunna:ḍu	'he is beating'
koṭṭina:ḍu	koṭṭæ:ḍu koṭṭiṇḍu	'he beat' (Coastal) (Telangana) (Rayalaseema retains the old Telugu form)
non-finite		
ce:sinayeḍala) ce:sinaco:	ce:ste:	'if done' (conditional)

Old Telugu continued in use only for written purposes, and remained as a communicative medium of the elite. Scholars also used it for platform speeches of all kinds until recently.

7.2.5

Role of Social Dialects

Upper-class speech which is highly Sanskritised was formerly used as the medium of education. Only upper-class speakers had the benefits of education until the latter part of the nineteenth century. This is also noted by Sjoberg (1962). Because of a limited number of people possessing this 'education' in the Sanskritic manner, much prominence was attached to the written language.

A written language is in some cases more appropriate than any spoken language, and for others, speech has an advantage over writing. This basic difference leads the spoken and written languages to develop separately. In certain cases the superposed standard and vernaculars differ vastly and can account for the differences of speech and writing. If the superposed standard happens to be a fellow dialect of vernaculars, in fact it should pave the way towards progressive weakening of dialectal differences. The vernaculars will be in 'free variation' within the common standard.

Unfortunately, this situation does not obtain in Telugu. In the case of old Telugu, the superposed standard was an abstract form and not any dialect. (Of course one will have to guess this as there is no evidence to prove or disprove it.) In the case of the modern written style, the Coastal dialect is adopted as a superposed standard variety. This being so, it is not favoured in toto by other dialect speakers. The Telugu Akademi entered the fray and created a 'compromise' variety, but it is not popular

elsewhere. The students and teachers who use the textbooks prepared by the Akademi, use the variety most reluctantly.

The problem of relationship between standard language and poetic language is very difficult to tackle in general, and more so in the Telugu language. Is poetic language a special branch of the standard, or is it an independent formation? Poetic language, as I see it, cannot be called a branch of the standard language for the reason that different forms of language may exist side by side in the work of poetry.

As it has already been rightly pointed out, the social dialects in India have often been referred to as 'Caste dialects', which is a misleading term. In rural areas of South India, this system still exists. Telugu Society has n- number of castes and double that number of caste dialects, unfortunately.

7.2.6

Speech Community

William Labov (1972:120) gives a definition which puts the emphasis on shared attitudes to the language. The definition is as follows:

> The speech community is not defined by any marked agreement in the use of language elements, so much as by participation in a set of shared norms; these norms may be observed in overt types of evaluative behaviour and by the uniformity of abstract patterns of variation which are invariant in respect of particular levels of usage.

In the above definition by 'overt types of evaluative behaviour', Labov probably has in mind the linguistic prejudices of the speakers. Hudson (1980:195) discusses these in great detail.

People use speech as a source of information about the speakers' characteristics. This basic need for information about the other person

has been called 'cognitive uncertainty' by social psychologists. Certain values are attached to the prejudices. These values reflect the group membership.

A person's speech pattern is an aspect of his behaviour, and this in turn provides a clue to his social identity.

Labov (1972:133) observes another phenomenon of sociolinguistic studies and names it as linguistic insecurity. Some people (or groups of people) believe that they speak badly. Communities of this type consist of people who believe that they 'ought' to use different forms from those they in fact use. By incorporating the phrase 'particular levels' in the definition of speech community, Labov means the linguistic contexts.

During my survey I realised that people have different views towards what is 'correct' language. But all of them have a tendency to use a variety which is appropriate to the context. The speakers have a 'phonetic consciousness' while making use of the variety. This consciousness may sometimes fit appropriately into the situation, and sometimes it may result in hyper forms. This phonetically conscious effort of the speaker is described by me in the following section in which I consider such phonetic features for setting up a list of social acts of identity.

7.3.0

Acts of Identity

Le Page et al. (1985:14) define linguistic behaviour as a series of acts of identity in which people reveal both their personal identity and their search for social roles.

In this section my main aim is to present some phonetic features which clearly mark regional dialects and social dialects. In a way, by observing

the presence of the features mentioned here, we will be able to identify the speaker's social background (i.e., with regard to his educational status and caste) and regional background (i.e., from which dialect region he hails, etc.) very easily. It may also be possible for us to predict at the same time the speaker's attempts at moving towards the so-called 'standard' form of the language.

The features presented here are (1) aspiration; (2) palatalisation; (3) gemination; (4) status of kṣ, and (5) retroflexion.

7.3.0.1

Aspiration

As mentioned in 2.2.3, aspiration that is found in borrowed vocabulary from Sanskrit is mostly maintained as a marker of prestige in educated speech. However, some educated speakers in informal speech, have a tendency to replace aspirated stops with unaspirated stops. My data presents a neat system as shown in Table 4. Educated Brahmin speakers have aspirated sounds in their phonological system in both formal and informal styles, whereas educated non-Brahmins have it only in the formal style of speech. In informal style they tend to lose aspirated sounds. Uneducated Brahmins in the formal style consider aspiration as a prestige marker and as an 'act of identity' (cf. 7.3.0) and try to maintain it in their speech. In informal speech, aspiration is lost from the phonological system of uneducated Brahmin speakers. Uneducated non-Brahmin speakers do not have aspiration as a feature in any style.

However, they all have aspiration for emphatic stress. It is discussed under Section 3.2.3.

It is necessary to look deeply into the origin of aspiration in Telugu. That will solve the problem which each scholar who worked in Telugu phonology faced earlier (also see 2.2.3 and 3.2.3).

There are four phonetically different aspiration processes taking place in Telugu speech. They are discussed briefly here.

1. The original aspirated forms borrowed into the Telugu lexicon from Sanskrit, which are mostly retained as a marker of prestige in educated speech.

   Examples:

   bhayam 'fear'

   me:gham 'cloud'

   mukham 'face'

   From my data it appears that these types of aspirated consonants are only present in Brahmin speech. The Telugu Akademi also reports the same (Telugu Dialect Bulletin Series IV 1972, p.10).

2. Aspiration for emphasis forms this group. Educated Brahmins use such aspiration mostly, but others because of their social contacts also use the aspiration of this type (see also 2.2.3 for details).

   Examples:

Non-emphatic			Emphatic
ga:li	'wind'	>	gha:li
ka:ram	'spicy'	>	kha:ram

3. If the stress of the word-initial syllable is wrongly imitated in a word with an aspirated consonant in the second syllable, the position of aspiration changes. A new aspirated consonant comes in. This new emergence is not, of course, for emphasis.

Examples:

Non-emphatic			Emphatic
ga:ndhi:	'Gandhi'	>	gha:ndi:
ba:dha	'pain'	>	bha:da
ba:wa	'brother-in-law'	>	bha:wa

This type of aspiration is restricted to educated speakers. Uneducated speakers who otherwise do not have aspiration in their phonological system do not observe this.

4. This type of aspiration gets into the language through palatalisation process.

Examples:

Form	Palatalised	Geminated	Gloss
paddenimidi	[pajjhenimidi]	[paddemmidi]	'eighteen'
madhya	[majjhɛ]	[maddɛ]	'in the middle'

Palatalisation is peculiar to Coastal speakers, whereas other just have gemination. So this type of aspiration demarcates the regional variation.

Thus the identification of the type of aspiration process in speech can lead us to the identification of the social (or regional) group to which the speaker belongs.

TABLE 4 : Aspiration across Social Dialects

	Educated Brahmin	Educated Non-brahmin	Uneducated Brahmin	Uneducated Non-brahmin	Gloss
Formal	[bhayaw̃]	[bhayaw̃]	[bhayaw̃]	[bayaw̃]	'fear'
	[khu:ni:]	[khu:ni:]	[khu:ni:]	[ku:ni]	'murder'
	[mukhaw̃]	[mukhaw̃]	[mukhaw̃] ~ [muhaw̃]	[mukam]	'face, mouth'
	[ba:dha]	[ba:dha]	[ba:dha]	[ba:da]	'pain'
Informal	[bayaw̃]	[bayaw̃]	[bayaw̃]	[bayaw̃]	
	[ku:ni:/ khu:ni:]	[ku:ni:]	[ku:ni:]	[ku:ni:]	(ibid.)
	[mukhaw̃]	[mukam]	[muhaw̃]	[mukam]	
	[ba:dha]	[ba:da]	[ba:da]	[ba:da]	

7.3.0.2

Palatalisation and Gemination

Palatalisation is a feature which distinguishes the geographical dialects. In this section I present a detailed account of palatalisation with reference to Telugu dialects.

Bhat (1978), while discussing palatalisation in general, categorically states that there are at least three distinct processes, namely, tongue-fronting, tongue-raising and spirantisation, which occur either independently or in combination and produce the effects of what is generally described as palatalisation. He specifically describes the environments in which these processes occur. They are as follows:

(a) an unstressed front vowel (or palatal semivowel) is very effective in producing tongue-raising (or apical palatalisation).

(b) a stressed front vowel is more effective than an unstressed vowel in producing tongue fronting (or velar palatalisation).

(c) Spirantisation occurs in the intervocalic position and has been generally considered as a case of assimilation of a consonant to the more open neighbouring vowels.

These cases also include cases of assimilation of a consonant to a neighbouring palatal consonant.

After presenting the above-mentioned diachronic processes, Bhat also mentions two conditions which automatically bring in a change which is considered as palatalisation. The first condition is the presence of a palatalising environment (i.e. it must be a front vowel, a palatal semivowel, or a palatal/palatalised consonant). The second condition is that the resulting sound from the change must be palatal or must have a secondary palatal articulation.

Bhat observes that the above mentioned three different diachronic

processes can be diferentiated (i) by the environments that induce them, (ii) by the consonants that are affected by them and (iii) by the languages or dialects that have undergone these changes. He observes that generally in a stressed syllable tongue fronting which affects velars is induced by the following front vowel. Tongue raising which is induced by the following palatal semivowel or high vowel affects apical and labial consonants. Spirantisation may affect the velars and apicals, and also the palatals, but very rarely the labials. Bhat has made use of the term 'spirantisation' to denote the quality of 'friction' which affects a consonant in a given environment. Thus only one of the processes constitute intervocalic weakening. As this process of spirantisation is not observed in Telugu, I do not propose to consider it in detail here.

The patterns of palatalisation in Telugu speech are discussed here. As I argue that no standard spoken form of a particular grade exists for Telugu, I take the spelling pronunciation of the written form, which is usually taken as the standard, as a basis for my point of reference and compare it with the Coastal and Telangana dialects. I present the data in broad phonemic transcription. Rayalaseema dialect forms are more or less similar to the Coastal data, as far as palatalisation is concerned.

I(i) In an initial cluster C_1 C_2, where C_2 is [y], it is dropped and the following vowel is a fronted palatal in the Coastal dialect. In Telangana [y] is also dropped, but there is no difference in vowel quality. In some cases, where there is an initial cluster with [y], Telangana dialect has one or other unit of the cluster but not both.

Written form	Coastal	Telangana	Gloss
nya:yamga:	nɐ:yanga:	na:yanga	'legally, logically'
$CG_2\breve{\alpha}^{w}CVCC\bar{V}$	$C\breve{\alpha}^{y}CVCC\bar{V}$	$C\breve{\alpha}^{w}CVCCV$	
wya:pa:ram	wɐ:paraw̃	wa:pa:ram	'business'
		or ya:pa:ram	
$CG_1\breve{\alpha}^{w}C\bar{V}CVC$	$C\breve{\alpha}^{y}C\bar{V}CV^{n}w$	$G_1\breve{\alpha}^{w}C\bar{V}CVC$	or $G_2\breve{\alpha}^{w}C\bar{V}CVC$

(ii) A cluster with [y] in medial position of a word differs in the following ways in uneducated speech and educated speech of the dialects noted above. However, Telangana dialect forms represent both educated and uneducated speech.

Written form	Coastal educated	Coastal uneducated	Telangana	Gloss
mukhyanga:	mukʲɛnga:	mukɛnga:	mukkenga	'chiefly'
marya:daga:	marya:daga:	marɛ:daga	mariya:daga	'respectfully'
ba:dhyata	ba:jjhɛta	ba:jjata	ba:ddeta	'responsibility'
widya:rthi	wijjha:rti	wijja:rti	widde:rti	'student'
padyam	pajjaw̃	pajjew̃	paddem	'poem'
udyo:gam	ujjo:gaw̃	uddo:gam		'employment'
ra:jyam	ra:jjɛw̃	ra:jjam		'kingdom'
madhya:hnam	majjhɔnaw̃	madda:nam		'afternoon'
satyam	saccew̃	sattem		'truth'
mutyam	muccew̃	muttem		'pearl'

II In an initial cluster of C_1C_2 where C_2 is [r], it is dropped in Coastal uneducated speech and Telangana educated and uneducated speech as well. In the case of coastal uneducated speech, palatalisation takes the form of tongue raising and fronting. In Telangana this palatalisation is not observed in either educated speech or uneducated speech.

Written form	Coastal educated	Coastal uneducated	Telangana (ed & uned)	Gloss
pra:ɳam	pra:ɳaw̃	paɳaw̃	pa:nam	'life'
	prx:ɳaw̃			
CLrᾱʷCVN	CLrᾱʷCVɳʷ	CᾱʸCVɳʷ	Cᾱʷ CVN	
	CLrᾱʸCVɳʷ			
prati	preti	peti	pati	'every'
CLrαʷCV	CLrɛʸCV	CɛʸCV	CαʷCV	
gra:mam	gra:maw̃	gɛ:maw̃	-	'village'
CLrᾱʷCVN	CLrᾱʷCVɳʷ	CɛʸCVɳʷ		
kramanga:	krɛwanga:	kɛwanga:	kemanga	'gradually'
CLrαʷNpVCCV̄	CLrɛʸGpVCCV̄	CɛʸCVCCV̄	kɛʸNNCCV	
pre:ma	pre:wa	pɛ:wa	pe:ma	'love'
CLrɛʸNV	CLrɛʸ GpV	CɛʸGpV	CɛʸNV	

The following are the relations of written forms with cluster PL with the dialect forms.

(i) Written form to the Telangana dialect form:

written form		Telangana dialect	Example:		
PLV	-	PV	pre:ma	- pe:ma	'love'
ᾱʷ	-	ᾱʷ	PLV̄CV	- PV̄CV	
αʷ	-	αʷ/ɛʸ			
ɛ̄ʸ	-	ɛ̄ʸ			
ɛ̄ʷ	-	ɛ̄ʷ			

(ii)

written form		Coastal (educated) dialect			
PLV	-	PLV	pre:ma	- pre:wa	'love'
			PLVCV	- PLV̄CV	
ᾱʷ	-	αʸ/ᾱʷ			
αʷ	-	ɛʸ			
ɛ̄ʸ	-	ɛ̄ʸ			
ɛ̄ʷ	-	ɛ̄ʷ			

(iii) written form - Coastal (uneducated) dialect

PLV	-	PV	pre:ma	-	p^{y}ɛ:w̃a
			PLV̄CV	-	PV̄CV
$\bar{\alpha}^{w}$	-	$\bar{\alpha}^{y}/\bar{\varepsilon}^{y}$			
α^{w}	-	ε^{y}			
$\bar{\varepsilon}^{y}$	-	$\bar{\varepsilon}^{y}$			
$\bar{\varepsilon}^{w}$	-	$\bar{\varepsilon}^{w}$			

III In uneducated speech of the Coastal dialect, either [y] in medial position between the vowels [a] is lost together with a loss of the medial syllable, and the final syllable has palatal quality in the form of tongue raising and fronting, or there is just the fronting of the final syllable.

written form	Coastal educated	Coastal uneducated	Gloss
wiṣayam	wiṣayaw̃	wiṣew̃	'subject matter'
CvCα^{w}G$_{c}$α^{w}N	CvCα^{w}G$_{c}$α^{w}nr	CvCε^{y}nw	
kha:yam	kha:yaw̃	ka:ɛ w̃	'certain'
Cᾱ^{w}G$_{c}$αN	Cᾱ^{w}G$_{c}$α^{w}nr	Cᾱ^{w}ε^{y}nr	

This is not observed in the Telangana dialect either in educated or uneducated speech. Thus in this context, uneducated Coastal speech has ε^{y} where written forms and educated Coastal speech have α^{w}.

IV The mid front vowel [e:] of the first syllable of written forms has a corresponding more open vowel, [ɤ:], in the Coastal dialect in both educated and uneducated speech. In the Telangana dialect the vowel is open and back, [a:], and is preceded by [y] which forms a cluster with the preceding consonant in educated and uneducated speech.

written form	Coastal	Telangana	Gloss
me:ka	mɤ:ka	mya:ka	'goat'
C ɛ̄ʸ C V	C ɑ̄ʸ C V	C G$_c$ ɑ̄^{ʷ} C V	
pe:ka	pɤ:ka	pya:ka	'playing cards'
C ɛ̄ʸ C V	C ɑ̄ʸ C V	C G$_c$ ɑ̄^{ʷ} C V	
pe:ṭa	pɤ:ṭa	pya:ṭa	'locality in a township'
C ɛ̄ʸ C V	C ɑ̄ʸ C V	C G$_c$ ɑ̄^{ʷ} C V	

Gemination needs to be considered along with palatalisation as speakers broadly fall into three groups. Some have palatalisation with gemination, some have palatalisation without gemination, and a third group have gemination without palatalisation.

Telugu has a system of gemination which may involve a geminate palatal stop or geminate alveolar stop. Ironically enough, this particular feature of 'palatalisation-gemination' distinguishes the social and regional dialects and serves as a marker of identity. The following note will explain the situation.

(a) Palatalisation as a phonetic feature, is present at all social levels in the Coastal dialect and is present to a degree in the Rayalaseema dialect (Narasimha Reddy: 1972; Telugu Akademi Dialect Bulletin Series - 2 Cuddapah dialect - mentions that the speech of political workers, businessmen, students and artisan employees contains the palatalisation feature). It is in the Telangana dialect that only traces of the palatalisation phenomenon are observed. There is fronting after medial clusters where the written form has a cluster with [y] and where the written form has intervocalic [y], as shown in the examples under I and III above.

(b) In the places where palatalisation is observed, the tongue raising feature is restricted to educated speech whereas the tongue fronting feature is more commonly observed in uneducated speech.

(c) Palatal geminate stops are a feature of the Coastal dialect whereas alveolar geminate stops are a feature of the Telangana dialect.

(d) Coastal Brahmin speakers have palatalisation features in their speech and have a tendency to produce a cluster with a spirant, [s], where the written form has the medial cluster with [thy]. Tongue raising palatalisation takes place in the place of [y] in the second syllable as shown in the examples below.

written form	Coastal Brahmin dialect	Coastal (others)	Gloss
pathyam	pasthew̃	pacchew̃	'diet'
CVʰPₜGᵪVN	CVSʰPₜɛʸᵐʳ	CVʰPᵖᵧPᵪɛʸᵐʳ	
tathyam	tasthew̃	tajjhew̃	'definite'
CVʰPₜGᵪVN	CVSʰPₜɛʸᵐʳ	CVʰᵛPPᵪɛʸᵐʳ	
a:tithyam	a:tisthew̃	a:tijjhew̃	'hospitality'
V̄CVʰPₜGᵪVN	V̄CVSʰPₜɛʸᵐʳ	V̄CVʰᵛPPᵪɛʸᵐʳ	

In the above examples aspiration is present in Coastal educated speech, but not in uneducated speech (see Sections 2.2.3 and 3.2.3).

7.3.0.3

Status of [kṣ]

Allen (1953:78-9) while discussing Sanskrit prosodies, mentions that there are certain peculiarities connected with the sequence stop + fricative in Sanskrit. He observes that the treatises in Sanskrit note the stop as an aspirated sound which is supported by Prakrit developments of the following types:

Sanskrit		Prakrit
matsara	>	macchara
kṣa:ra	>	kha:ra cha:ra

This treatment is restricted by Śaunaka and Bādabhikāra to only those cases where stop and fricative are heterorganic. Allen notes this and further states that [kṣ] in Sanskrit also alternates with [khy] in such roots as kṣa:/khya:. He notes that the cluster of stop and fricative is also realised as [kʂ] and states that the complexity of what is transcribed as kṣ may, in fact, have been in the nature of an affricate unit which is not describable in terms of [k] and [ṣ]. Allen quotes Ramasarman, who, in his commentary on the Pratijña sūtra, points out that it is a single and indivisible letter. It is simply a fact that it is written in Nāgari with a single symbol which, Allen notes, bears no evident relationship to the symbols for [k] or [ṣ].

The observations of Allen, as noted above, bring out certain points which are very important in the context of Telugu social dialects.

The voiceless velar plosive and sibilant together form a cluster and this cluster is not an original form in the Telugu system. It is a borrowed feature from Sanskrit and later from certain Hindustani elements.

Sanskrit		Old Telugu		Modern Telugu	
				1	2
kś kṣ khy	>	kṣ	>	[t͡s]	[t͡tʂ]
ts	>	ts	>	[t͡s]	[t͡tʂ]

The position in the present-day spoken Telugu is illustrated above. Before presenting my analysis, I would like to survey the hitherto published work on this question.

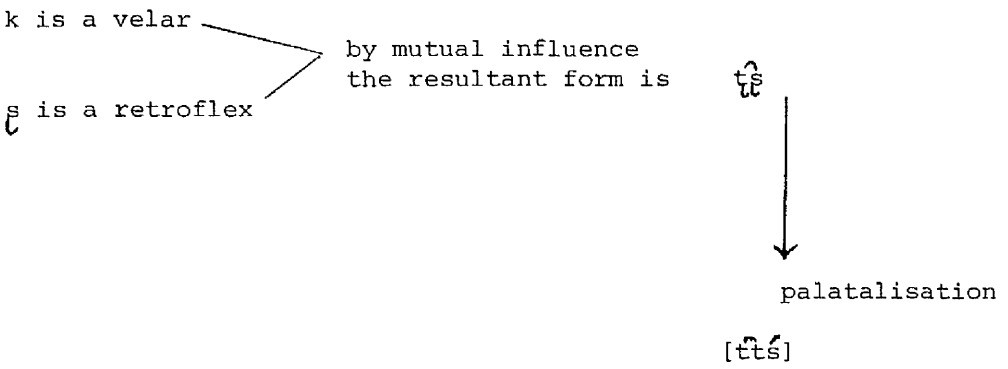
Radhakrishna (1972) in his editorial note to the Cuddapah (dialect bulletin) makes a note of the status of what he represents as ks in Telugu. He observes that many Telugu people (who are not aware of traditional grammar) are of the opinion that kṣ is a separate phoneme, but he considers that it is not. According to Telugu grammatical tradition, it is to be considered as a cluster of voiceless velar plosive /k/ + postalveolar sibilant /ʂ/. Radhakrishna then observes that there are two graphemic representations of kṣ in the orthography as క్ష (kś) and క్ష (kṣ). For the second orthographic form, he cites two pronunciations as [kʂ] and [tʂ] and cites the following examples. The sibilant is postalveolar non-retroflex.

pak͡ʂi 'bird'

rit͡ʂa: 'a hand-drawn cart'

He states that these cases are typical examples to show that they are different. This according to him is the reason for [rit͡ʂa:] being written with a different graphemic form as k + ṣ instead of k + ṣ.

Radhakrishna also discusses the origin of the word [lat͡tsa] in uneducated speech. He describes it as originating from the Sanskrit form [lakṣa], as follows:



However, this analysis is not acceptable for me. I attempt to present a more economical phonetic-oriented analysis.

Reddy (1981) states that [kʂ] is replaced by [t͡ʂ] in the Rayalaseema dialect (more specifically in the Tirupati dialect, which happens to be her native area) and she has given phonemic status to this sound in her maximum system. She observes that [t͡ʂ] occurs only in loan words, but contrasts with other affricates in educated speech in such minimal pairs as given below, and therefore needs to treated as an independent phoneme.

ci:ra	'saree'	pacci	'raw'
t͡ʂi:ra	'milk'	pat͡ʂi	'bird'

This use of [t͡ʂ] in Rayalaseema seems unusual to me. To my knowledge these affricates are present only in the Coastal dialect.

As Allen rightly pointed out, the k͡s and t͡s clusters of Sanskrit are not only a problem for students of Sanskrit phonetics, but the clusters when borrowed into Telugu also offer some peculiar situations. However, if carefully studied in detail, these peculiarities may offer a solution to the descriptions of existing social speech variations. Let us look at some data.

Initial k͡ʂ

k͡ʂaɳam	'moment'
k͡ʂatriya	'a caste'
k͡ʂamincu	'to excuse'

Initial kṣ (cont'd)

kṣaya	'tuberculosis'
kṣi:ṇam	'decline, decay'
kṣi:ra:nnam	'pudding'
kṣunnam	'completely'
kṣe:mam	'safe'
kṣo:bha	'grief, sorrow'
kṣauram	'haircutting'

All these are Sanskrit borrowings, and as is clear, kṣ can occur before all vowels. In educated speech the kṣ cluster is replaced by a voiceless palatal aspirated affricate [čh] in Telugu.

Educated speakers are aware of the Sanskrit kṣ cluster, and try to adhere to its pronunciation, but often replace it by the near equivalent [č h].

Uneducated speakers in their speech give a corresponding pronunciation, but without aspiration, i.e. [č]. As has been noted already, aspiration is a caste and education feature, and affrication is only an education feature. It is to be noted that the pronunciation of this sound merges with regular palatal affricate [č], for which there is no aspirate counterpart, at least in modern Telugu usage.

Let us now consider some examples of kṣ in medial position. The argument put forward by Radhakrishna with regard to kṣ and tṣ and their orthographic representation, is disproved as it will be seen that the different pronunciations of [ritṣa:/rikṣa:] and [pakṣi/patṣi] are represented differently in the written forms.

Medial k͡ʂ

ʃik͡ʂa	'punishment'
ʤi:k͡ʂa	'concentration'
a:pe:k͡ʂa	'affection'
pak͡ʂi ~ patʃi	'bird'
kak͡ʂa	'revenge'
rik͡ʂa: ~ ritʃa	'a hand-drawn cart'
ra:k͡ʂasi	'demon'

The above Sanskrit loans have [k͡s] pronounced as [ʧh] by educated speakers, as in the case of the word-initial forms mentioned above. This situation is, however, restricted to formal speech. In informal speech the situation may vary. In the forms where k͡ʂ has the value [kʃ] and is preceded or followed by a short front vowel [i], [kʃ] harmonises with the vowel, thus making the velar a postalveolar sound. This postalveolar [tʃ] in turn harmonises or assimilates the palatal [ʃ] to retroflex [ʂ]. In words borrowed from Hindustani the cluster is [kʂ] but not [kʃ]. In colloquial speech forms the influence of Hindustani dominates over classical Sanskrit forms. Thus the Hindustani forms might have induced a sort of hyper-standardisation.

The other controversial stop + fricative cluster as suggested by Allen is [ts]. Unliks [k͡ʂ] this cluster is restricted only to medial position.

Medial ts

samwatsaram	'year'
samwatsara:di	'New Year's Day'.

This cluster has become an aspirated alveolar affricate [t͡sh] in educated speech. Thus we have:

samwa[ts^{h}]aram	'year'
samwa[ts^{h}]ara:di	'New Year's Day'.

However, it is to be noted that this aspirated affricate differs from the aspirated palato-alveolar affricate [ɕh].

Examples:

[ɕhalo:kti] 'joke'

[wa:n ɕha] 'desire'

Thus it is evident that Sanskrit stop + fricative clusters of different origins have merged into only one in Telugu.

Sanskrit	Modern Telugu
k͡s	[t͡sh]
t͡s	

This affricate has two phonetic variations in Telugu - a palatal affricate and an alveolar affricate. This development in Telugu leads us to believe that originally the Sanskrit pronunciation must have been a palatal sibilant. Otherwise there is no basis for a palatal sound in Telugu. Secondly, in modern Telugu, because of borrowing from Urdu, the stop + retroflex sibilant cluster came into existence. These in turn might have influenced the borrowed items in Telugu and their phonetic features. Some modernists who adhere to what is called 'phonetic spelling' in Telugu give orthographic representation to the different forms of the affricate.

Interestingly enough, both these forms are represented in uneducated speech as simple palatal stops. Sanskrit k͡s and t͡s in medial position have developed into [t͡s] a voiceless palatal affricate. Forms with [t͡s] in initial position do not exist, and those with [k͡s] initial are identified as Sanskrit forms by uneducated speakers in general, and they tend to replace such words with native vocabulary. However, in rare cases, they may try to produce the Sanskrit forms in formal speech. In such cases [k͡s] is

represented by a single palato-alveolar affricate sound, as in:

kʂamincu > [cemincu]

kʂaya > [ceya]

This c , in uneducated speech like any other c form present originally, also undergoes a change to [s].

Then the forms will be:

kʂamincu	>	[cemincu]	>	[semincu]	'to excuse'
kʂaya	>	[c eya]	>	[seya]	'tuberculosis'

7.3.0.4

Retroflexion

Retroflexion is generally discussed by Indian traditional scholars in connection with places of articulation and also in relation to its prosodic function. Allen (1953) observes that to consider the retroflex articulations on the same terms as the velars, palatals, dentals or labials is, even from the point of view of the Indian descriptive framework, not entirely justified.

In the Taittireyi Pratisakhya there is a mention of the position of articulators in the neutral state. It states that 'the tongue is extended and depressed, and the lips are in the position for a'. Allen quotes this and says (1953:33) that in such a condition the velar, palatal, dental and labial articulators are approximately opposite their respective places of articulation. He further states that the utterance of this series of sounds is effected simply by means of the closure processes ranging from complete closure to open. Allen makes clear that retroflexes differ from the rest. The traditional Indian treatises recognise this by stating that the retroflex series is articulated 'by rolling back the tip of the tongue'. Allen interprets this further, and says that the place of articulation is not

automatically determined by the application of the closure processes to the apical articulator. There is need of a further 'prayatna', i.e., articulatory effort. Allen concludes that it would have been desirable to include this at this point in the treatise.

Allen (1953:52) notes that the traditional treatises recognised the term 'retroflexal' (prativestita), and the grammarians and phoneticians gave a special term for this as 'muurdhanya', which is an adjective derived from 'muurdhan' - head. There the definition was as follows: 'For the muurdhanyas the articulator is the tip of the tongue retroflexed' (muurdhanyānām jihwaagram prativestitam). They further note that in the ṭ series, contact is made with the tip of the tongue rolled back in 'muurdhan' (jihvāgrēna prativēṣṭya mūrdhani ṭa varga).

Tribhāsyaratna says that muurdhan refers to the upper part of the buccal cavity. Allen expresses doubts over the point whether word muurdhan was ever used in this special sense. The reason for this doubt is that Pratijnā Sūtra refers to śiras (which means head) in place of muurdhan in a list of place of articulations. Allen cites the occurrence of somewhat obsolete forms like cerebral and cacuminal to prove his theory. It has rightly been said by Allen that retroflex sounds were borrowed into Indo-Aryan languages from Dravidian at a much later date, and as a result a precise phonetic description is lacking.

The Āpiśali Śikśa has made an acute observation with regard to the retroflex series. It notes that in the retroflex series the contact is made not with the tip but with the part next to the tip or the underside of the tip (jihwōpāgrena mūrdhanyānām, jihwāgradhakaranamvā).

J.R. Firth (1935:XIX) observes, 'The Indian ṭ is not made with the tip in the English manner, but with the very edge or rim of the tip, which is slightly curled back to make this possible'.

Allen notes (ibid.:56) that in the retroflex series there remains only a pecularity connected with the fricative ṣ. He cites Pratijñā Sūtra which is repeated in a number of the later Śiksās. The observation is as follows: alone or combined with consonants (other than retroflex), ṣ is to be pronounced as kh. Allen (ibid.) tells us that this pronunciation is attested by Grierson in his modern Indo-Aryan vernaculars.

As already mentioned, retroflex sounds are not native to Indo-Aryan languages. They are Dravidian in origin. In Telugu the peculiarity with retroflex consonants is as follows:

a) The retroflex stop series involves five different types: viz., ṭ, ḍ, ṭh, ḍh and ṇ. Of these only the four oral sounds can occur in word-initial position. The nasal retroflex can only occur in word-medial position. Aspirated retroflex sounds are less frequent than unaspirated ones.

b) The retroflex lateral occurs only in word-medial position. The word-medial occurrences are mostly Sanskrit borrowings when the consonant is single. In geminate form it occurs in native Telugu vocabulary.

c) The retroflex sibilant occurs mostly in Sanskrit vocabulary forms which are borrowed into Telugu. It also occurs in Hindustani vocabulary borrowed into Telugu.

It is to be noted that the retroflex consonants are of three different classes in Telugu: (a) stops; (b) liquids, and (c) sibilants.

Of these three types, it is only the stops which definitely behave like retroflex consonants totally, that is with the tongue top curled back and the underside of the tongue tip touching the roof of the mouth. In the case of liquids the tongue tip is curled back, but not as much as in the

case of stops. In the case of sibilants, there is no curling at all. Let us now look at the descriptions of modern phoneticians.

Abercrombie (1967:51) very clearly states that in certain types of structure the active and passive articulators are organs which, when they are at rest, do not lie immediately opposite each other. He gives a new label to them as 'displaced' articulations, and expresses that same adjective which is more specific than one indicating only the passive articulator must be used to refer to it. He lists retroflexion as a displaced articulation, when the point of the tongue is raised towards the hard palate, and also curled back as well. The label retroflex which is used for this class of consonants, does not directly identify the two articulators concerned. Kostić et al. (1977) describe the Telugu retroflex consonants as follows:

> ṭ is a voiceless (post-alveolar) retroflex stop and is restricted to word-initial and medial positions. At the time of articulation of ṭ, the lip position is either neutral, or rounded if it is followed by a back vowel. It is specifically observed that the tip and the root of the tongue, as well as the position of the larynx are involved in the articulation of this consonant. The tip of the tongue is raised to a point up to and beyond the alveolar ridge pressing it with its innerside. The contact between the tongue and the front part of the roof of the mouth may vary from alveolar to the post-alveolar area. The firmness of the contact may be spread over the edges of the tongue, covering all the post-alveolar ridge, forming a closed chamber in the front part of the mouth. The mid and back part of the tongue slopes down, pressing the root of the tongue against the hyoid bone, lifting up the laryngeal system. The resonator formed in the palatal area of the buccal cavity, and that of the laryngeal area connected with pharyngeal cavity, are responsible for the retroflex ṭ.
>
> (ibid.:110-11)

ḍ voiced unaspirated postalveolar retroflex consonant occurs in word-initial and medial positions.

> The place of contact between the tip of the tongue and the post-alveolar area is approximately the same as

> for retroflex ʈ. The occlusive period is shorter for voiced retroflex ɖ than its voiceless pair ʈ. Due to the less tense front barrier, the consonant may have incomplete occlusion. If in initial position, occlusion is complete, as well as in medial position after a short vowel. If the consonant stands as a first member in a cluster, the occlusion is normal. In intervocalic position it is altogether replaced by a flap sound. The period of explosion for this is weaker than that for ʈ.
>
> (ibid.:114)

ɳ retroflex nasal occurs only in word-medial position.

> The tip of the tongue is curved back with its innerside placed against the post-alveolar area similar to the position of the tongue for retroflex ʈ. During the release of the front barrier there is an abrupt burst very similar to that of ɖ.
>
> (ibid.:178)

ɭ retroflex lateral occurs only in word-medial position.

> The tip of the tongue is curved up and placed on the post-alveolar ridge. The contact with the lower part of the tip of the tongue and post-alveolar ridge is firm especially just before disjuncture. For ɭ the separation (of the tip of the tongue from the place of contact) results in an abrupt, explosive-like burst.
>
> (ibid.:187)

š voiceless palatal fricative[3] occurs in word-initial and medial positions.

> The configuration of the tongue is approximately the same for the articulation of fricative ś. The difference between š and ś is in the volume of front cavity which is formed between the innerside of the front teeth, the alveolar and post-alveolar area and the surface of the front part of the tongue. This cavity is larger for š than ś. The tip of the tongue leans down while the front and mid parts of the tongue are raised towards the alveo-palatal area.
>
> (ibid.:153)

---

3. By treating it as palatal fricative, Kostić et al. differ from all others who label it as a retroflex sibilant.

The above observations of traditional scholars as well as modernists show that there is a remarkable difference in the phonetic qualities of the sounds ʈ, ɖ, ɳ, ɭ and ʂ. The sibilant consonant has more of non-retroflex features, whereas the other four consonants have more retroflex features.

7.3.0.4.1

Need for Considering Retroflexion

In the educated speech there are retroflex stops but the retroflex nasal, lateral and sibilant sounds are absent. Uneducated speech has all the five terms of the P system (see 7.5.1.2 where the C systems are described).

V/Vp$_{ʈ}$ is found in uneducated speech just as in the speech of other speakers. In the N system, unlike others who have three terms, uneducated speakers (who do not have any sociocultural exposure) have only two terms. In all cases where others have N$_{ʈ}$ they substitute N$_{t}$. The same is the case in the L system. L$_{ʈ}$ is not present in their system. In this system again, instead of the three terms of abstract system they have only one. In educated speech of the Telangana and Coastal areas, however, the S system has two terms, t and ʈ.

Kostić et al. have observed that the quality of retroflexion is clearly audible in the case of ʈ, ɖ, ɳ, ɭ, but not ʂ. Traditional scholars observed that only stops have the tongue tip curled back and the underside of the tongue tip touching the roof of the mouth. In the case of laterals, the tongue tip is curled back, but not as much as in the case of stops.

This suggests why all speakers, irrespective of their educational or other social background, have retroflex stops. In the case of ʈ, 'the

contact between the tongue and the front part of the roof of the mouth may vary from alveolar to post-alveolar (Kostić et al.:110). I conclude from this statement that as long as it does not fall within the domain of a dental sound, it is considered as a retroflex stop. In the case of ɖ, 'The occlusive period is shorter than ʈ' (ibid.:114). In the usage of uneducated speakers we observe that both ʈ and ɖ have complete closure when they are in gemination. As we have already observed, geminate consonants occur only in word-medial position. That is to say, the retroflex ʈ and ɖ in gemination (occurring in word-medial position) are common to all speakers. (See 7.5.1 for hyper forms which involve geminate consonants.)

ɭ and ɳ occur only in word-medial position. Both these involve an abrupt burst, by releasing the point of contact of the underside of the tip of the tongue. The retroflex nasal, ɳ, can be classed with other stop consonants as far as retroflex quality is concerned. The lateral consonant ɭ is less retroflexed. As a matter of fact, some uneducated speakers have the following possibilities in word-medial positions. This refers to the Coastal and Kalinga dialects.

baɖi	>	baɽi	>	baɭi	'school'
				bari	
mu:ɖu	>	mu:ɽu	>	mu:ɭu	'three'
				mu:ru	

7.4.0

On Defining Standard Telugu

The question of defining standard Telugu is a non-controversial point to discuss according to many purists (including many pedagogues). What forms this standard assumes is the controversial point of discussion between

purists with their absolutist views of correctness handed down from such grammarians as Chinnayasuri (1860), and repeated in school books from then on, on the one hand, and on the other, linguists who are aware of the history and diversity of Telugu and its usages. The attack from the traditionalists still goes on virtually unabated. The modernists (linguists and non-traditional language scholars), however, have now assumed a different position for themselves by questioning the very notion of standard Telugu. As Edward Stephenson (1974:211) observes, it is an interesting change 'from attackers who believe in an absolute standard to attackers who believe in no standard'. This notion of no standard is further strengthened by my data of sixteen subjects who are all lecturers in the Andhra Pradesh State Education Department. The data present a relatively wide variation in the speech of the subjects. The traditionalists only take grammar into account when assessing the standard and give less importance to the pronunciation. They are thus not aware of the wide variation in pronunciation which needs to be taken into consideration along with other parameters. As noted above, traditionalists are concerned more with a written standard form, but the modernists are concerned with the spoken standard form of the language, with an emphasis on pronunciation.

'Admittedly, standard...is difficult to define, is constantly changing, and is relative not only to time but to situation and place as well' (Stephenson 1974:211).

'Human languages tend to have both vertical and horizontal dimensions. Vertical lines separate the regional dialects and horizontal lines separate the social dialects' (ibid.:212).

These statements of Stephenson are considered when I examine the situation obtaining in Telugu.

Modern standard Telugu used in modern/present-day literature and the mass media, has been identified as that variety which is based on the speech of educated people of the central (or Coastal) area. The language of the Coastal districts is accepted as the standard variety (cf. Kostić et al.1977:1). It is also noted that there are differences between standard Telugu and non-standard varieties (cf. 2.1.1), particularly in phonology and morphology. 'In the process of acquisition of education, speakers of non-standard Telugu make a conscious effort to acquire the phonemic distinctions of standard Telugu' (ibid.:2). This point is relevant for my analysis. In the process of acquisition of education, non-standard speakers are subjected to strict vigilance to make them acquire the standard phonetic features but not the morphological features or syntax. It is a sort of audio-visual training for the non-standard speaker, because he is able to see the syllabary in printed form and to hear it pronounced by the teachers in a standard way. Apart from this type of artificial classroom training, the learners do not have much opportunity to hear these sounds in natural language surroundings. In other words, education introduces certain phonetic features to the non-standard speakers which they have to learn as they do in the case of foreign language sounds. As we are aware, in such situations there is always the possibility of underdifferentiation or overdifferentiation. The question that arises then is whether it is justified to equate education with the use of the standard form? My answer to this self-posed question is that it is not. My data provide ample evidence to demonstrate that even educated speakers do not have certain phonetic features in their speech which have been identified by Krishnamurti (1962) and Kostić et al.(1977) as standard features (passim 1). Kostić et al. have come to the conclusion that inadequate educational background of the speakers is responsible for the substandard variety, and

that by identifying certain phonological features as standard, in accordance with prescriptive attitudes to the language, it is possible to describe a standard variety.

As Milroy and Milroy (1985) rightly point out, 'prescription depends on an ideology (or set of beliefs) concerning language which requires that in language use, as in other matters, things shall be done in the "right" way' (ibid.:1). Linguistics is primarily a descriptive-oriented discipline. 'Linguistics is descriptive, not prescriptive. A linguist is interested in what is said, not what he thinks ought to be said. He describes language in all its aspects, but does not prescribe rules of correctness' (Aitchison 1978:13). In this connection it is also necessary to remind ourselves of the observations of Daniel Jones (1956:xvi). Ignoring these and other such remarks, certain writers set themselves up as public guardians of usage, commenting on supposed misuse of language and on supposed language decline.

Milroy and Milroy (1985) refer to the formal structures of language as opposed to actual use of language - particular occasions. Their 'formal structure' can be equated with that of la langue (approximately equal to 'language system') and their 'use of language' to la parole (approximately equal to 'language use') of Ferdinand de Saussure. It may also be equated with 'competence' and 'performance' of Chomsky (1965). Competence, according to Chomsky, is the underlying rules of language which the native speakers know. This is an abstract feature. When anyone comments about language, it is obviously this abstract system that they have in mind, but they apply it to the language use. What is considered as 'standard' language is approximately this abstract language system. There may be some speakers who represent the total 'abstract language system' in their speech, but the majority of speakers do not practise it in actual language. People

continue to use non-standard varieties and still claim to agree that only the 'standard' form is 'correct'. This is a clear mismatch.

It is also noted by many linguists that no spoken language can ever be fully standardised. Spoken language is diverse in its forms and functions, whereas the norms of the grammar of written languages are uniform. Thus written usage in a way contributes towards the standardisation of speech. This has been carried over into prescriptive pronouncements on usage. Spelling has been considered at the uniform level of language use, and this in turn has contributed towards pronunciation. This is the condition obtaining in the languages of the world in general. Languages may also exhibit the principle of uniformity in usage applicable in other levels of linguistic organisation, i.e., sentence construction, etc. But in Telugu the standardisation has taken a different turn. The written language, i.e., spelling, is considered as the measuring rod for standard pronunciation, but the written language is not taken as a basis for standardisation for other levels of linguistic description, viz., morphology and syntax. For them the basis is the so-called 'standard' spoken variety. As this involves regional variations, there is no agreement over it.

7.4.1

Need for Standard Telugu

The need to define standard Telugu may be agreed upon by people for various reasons. I discuss these reasons under the headings proposed by Wolfram and Fasold (1974) who do not accept the concept of standard language, as opposed to the majority of sociolinguists.

1. Propriety

It is agreed that different styles of speech are appropriate on

different occasions, but often there is confusion of dialect with diction.

2. Psychological Theory

According to this, a standard language may serve a unifying function, by linking an individual speaker with a large community. Whereas the unifying function may unite individual speakers, what is identified as the separatist function opposes the standard language to other languages or varieties as a separate entity, thus potentially serving as a symbol of national identity (ibid.:22). Further, Wolfram and Fasold say that these above-mentioned functions homogen͡ise the language. Language standardisation seems to be inevitable in most countries of the world. It is also observed by Wolfram and Fasold that one must realistically concede that the establishment of prescriptive norms for correct speech is an inevitable by-product of the awareness of behavioural norms of all types.

If language standardisation is an historical inevitability, Meyers (1974) wonders why prescriptivists find it difficult to help it along.

3. Power and Prestige Theory

According to this, the rich and influential have matters their own way in the language. Frederick Crews (1974) observes that, 'The speech habits of one linguistic group...the group, not surprisingly, containing nearly all the most powerful members of society', constitutes the standard language (Crews 1974:173). If this is acceptable, then there is absolutely no need to consider the middle-class speakers' speech habits. Similarly, if the Brahmin speech is considered as the standard form, or at least as much the closest to it, there is

little reason to consider the forms of other speakers. But unfortunately, neither the economic class nor the social class alone contribute towards a standard Telugu.

4. Better-tool Theory

This notion explains the individual's belief that 'formal' language is necessary for a particular purpose. Those who argue in favour of this theory, probably have vocabulary in their minds. One is at a loss to know whether they mean vocabulary alone, or also pronunciation. In languages like Telugu, mere usage of vocabulary may not be useful. Vocabulary may be used by speakers without adhering to the standard pronunciation. Telugu has borrowed Sanskrit vocabulary, and spelling pronunciation is a must in these cases.

It is clear now that there is no pressing need to define a presently non-existent form of the language. By trying to define the standard form of language we may raise more problems than we solve. As an anonymous scholar has noted, 'Every man would have been willing, and many would have been proud to disobey'.

7.4.2

Can (and Should) Standard Telugu be Defined?

In a way any attempt to define standard Telugu is redundant because most of us already know what it is: it is that kind of Telugu that Telugu people do not speak.

Kostić et al. have described the educated Coastal speech as the generally accepted form of standard Telugu. But as pointed out earlier, 'education' is a concept which needs further clarification and consideration.

In recent years it has been repeatedly demonstrated by sociolinguists that observed linguistic changes often correlate with social factors, e.g., Labov (1972), Trudgill (1974), Milroy and Milroy (1978). Labov (1964) at the end of his thought-provoking paper observes a set of those children 'who need the ability to use standard language, [but] do not learn this form of the language' (ibid.:497). In a discussion that followed this paper, Labov was asked to enumerate 'the indices of standard English in New York City' that had been the subject matter of his study. These indices are part of the language that children need to be able to use. In other words, they are prescriptive features of a standard language. For Labov, the features are as follows:

1. The use of r in post-vocalic and pre-consonantal position.
2. The vowel of bad, ask, dance, had, and cash.
3. The stressed vowel in awful, coffee, office.
4. The use of [θ] in thing, thin.
5. The use of [ð] in then, the.

7.4.3

Suggested Indices for Standard Telugu

Just as Labov provided indices for standard English, I would like to attempt the same for standard Telugu. Reasons for selecting the particular features as indices are given below.

1. The Use of Aspiration

Aspiration as a phonetic and phonological feature occurs only in the borrowed lexical items from Sanskrit to Telugu. Education in ancient days was restricted to a privileged class. As a result, the speech of that particular group of speakers was enriched by aspiration as a phonemic

feature. Even in that class of speakers, uneducated individuals may or may not preserve this feature. Thus aspiration was looked upon as a mark of social prestige. Because the feature has acquired a prestigious status, uneducated speakers (and the educated also in some cases) created a number of hyper forms in the language. For example:

gha:li < ga:li 'breeze'

okkha < okka 'only one'

These, in fact, are used for emphasis by upper-caste speakers who have aspiration in their phonological system. Modern education has given the feature of aspiration to all speakers in the written form. But in speech it has no place. Hyper forms are present only in speech and not in writing.

Furthermore, when aspirated consonants occur in the second syllable, the general trend is to shift the place of aspiration to the first syllable. In my data I have forms such as:

'ba:dha > bha:da 'problem, pain'

'ga:ndhi: > gha:ndi: 'Mahatma Gandhi'

'katha > khata 'story'

Aspirating consonants at the appropriate places is one of the features which can be considered as a standard index. This is a caste marker according to my data.

2. Use of Fricative [f]

This is a sound borrowed into Telugu from Urdu in ancient times and English in modern times. It has no corresponding grapheme in the Telugu syllabary. It is roughly equated with the voiceless bilabial

aspirated plosive [ph] grapheme. Using [f] as a fricative sound is also a marker of education and social prestige. Uneducated speakers do not pronounce [f]. Certain castes may use [ph] instead. Uneducated speakers who do not have aspirates in their system equate it with [p].

3. The Use of Retroflex (Lateral, Nasal and Sibilant)

Retroflexion is non-native to Sanskrit. It was originally borrowed from the Dravidian languages. Strangely enough, the retroflexion of lateral, nasal and sibilant has been reborrowed into Telugu, and is used by Brahmin speakers. The native Telugu vocabulary has the retroflex stop series in word-initial and word-medial positions. The frequency is relatively less than that of dental or alveolar stops. Also, there are retroflex ɭ and ɳ in native Telugu forms, but these are instances found only in certain morphological processes. For example:

kannu	'eye'	+	lu	'pl.suffix'	⟶	kaɳɳu kaɭɭu	'eyes'
baḍi	'school'	+	lu		⟶	baɭɭu	'schools'
paṇḍu	'fruit'	+	lu		⟶	paɳɳu paɭɭu	'fruits'

ɭ and ɳ do not occur in word-initial position. In word-medial position they are found mostly in gemination as far as native Telugu vocabulary is concerned. The vocabulary of native Telugu with a single retroflex [ɭ] or [ɳ] has either become obsolete or has been reduced to dialect variant status.

The retroflex sibilant may occur in word-initial position, but with reduced frequency. In word-medial position it is found in clusters

with a retroflex [ʈ], or may occur singly.

Unlike the earlier two features, this is neither a caste feature nor an education feature. It has something to do with wider socio-cultural exposure of the speakers. (See 7.3.0.4.)

4. The Vowel [æ:]

This low front vowel is a clear marker of geographical region, and is found in the Coastal dialect. It also occurs in the Rayalaseema dialect, but only in vowel harmony and Sandhi situations. The Telugu Akademi dialect bulletins indicate that [æ:] is fast acquiring phonemic status in the Rayalaseems dialect due to the influence of Coastal speakers (the so-called 'standard' speakers). The bulletins show that the Rayalaseems dialect has the following forms; the Coastal and Telangana forms are shown for comparison:

Coastal:	vaccæɖu	'he came'
Rayalaseema:	vaccina:ɖu	
Telangana:	vaccinɖu	

[æ:] never occurs in the Telangana dialect. A front, mid-vowel corresponds to this low front vowel. In mono-morphemic forms [æ:] corresponds to [e:] or a [ʸ] glide followed by [a:]. For example:

Coastal	Telangana	Gloss
mæka	me:ka mʸa:ka	'goat'
bænku	be:nku bʸa:nku	'bank'

Unlike the three earlier features, this feature is regional based. Telangana speakers who do not have this sound are able to recognise the other groups by the presence of [æ:] in their speech and they, in

turn, are identified by others by the absence of [æ:]. Telangana speakers cite as justification for their antagonism to [æ:] that there is no grapheme for this vowel in the syllabary.

5. Retention of Unstressed Second Syllable

The Telugu stress patterns offer a peculiar situation, as already discussed elsewhere (cf. 3.2.2). The second syllable in a trisyllabic or polysyllabic word is unstressed. In the Coastal and Rayalaseema dialects this unstressed vowel is retained at least in the form of a [ə]. But in the Telangana dialect this second unstressed syllable is lost, thus giving room for internal Sandhi (as scholars describe it). The clusters thus created are very many, and many of them are restricted in their distribution to word-medial position only. In fact, Telangana Telugu has acquired this feature under the influence of Urdu. It is said that in the Urdu language, the second syllable is weak and is generally lost, thus giving rise to word-medial clusters. The Telangana area was under Urdu-speaking kings for a long time, and during that time the Telugu language was second to Urdu. In effect, the Telugu of Telangana developed the phonetic feature of dropping the unstressed second syllable. Most Telugu dialects have syllable-timed rhythm, i.e., an even rhythm is maintained throughout. Telangana Telugu differs from this, and appears to have partly stress-timed rhythm.

In the five features mentioned above, the last two features relate to regional dialect variations. The presence of [æ:] is attributed to the influence of English and also to a phonetic development from ina (with a loss of nasal). Consonantal clusters are attributed to syllable loss resulting from the influence of Urdu. The other three features reflect the social situation.

TABLE 5 : The Regional and Social Dialect Variations in Speech

Phoneme	Grapheme	Educated						Uneducated						Regional		
		Formal	Informal	Upper Caste	Other Castes	Literacy	Colloquial	Formal	Informal	Upper Caste	Other Castes	Literacy	Colloquial	Coastal	Rayalaseema	Telangana
i	i	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
i	i:	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e	e	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e	e:	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
æ	-	X	X	X	-	X	-	X	-	X	-	-	-	X	X	-
æ:	-	X	X	X	-	X	-	X	-	X	-	-	-	X	-	-
u	u	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
u	u:	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
o	o	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
o:	o:	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
a	a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
a:	a:	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
p	pa	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TABLE 5 (continued)

Phoneme	Grapheme	Educated						Uneducated						Regional		
		Formal	Informal	Upper Caste	Other Castes	Literacy	Colloquial	Formal	Informal	Upper Caste	Other Castes	Literacy	Colloquial	Coastal	Rayalaseema	Telangana
ph	pha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
b	ba	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
bh	bha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
t	ta	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
[th]	tha	-	-	-	-	X	-	-	-	-	-	-	-	-	X	-
d	da	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
dh	dha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
t	ta	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
th	tha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
d	da	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
dh	dha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
c	ca	X	X	X	-	X	X	X	-	X	-	X	-	X	X	X
ch	cha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X

TABLE 5 (continued)

Phoneme	Grapheme	Educated						Uneducated						Regional		
		Formal	Informal	Upper Caste	Other Castes	Literacy	Colloquial	Formal	Informal	Upper Caste	Other Castes	Literacy	Colloquial	Coastal	Rayalaseema	Telangana
j	ja	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
jh	jha	X	-	-	-	X	-	-	-	-	-	-	-	X	X	X
ts	c	X	-	X	-	X	-	-	-	-	-	-	-	X	-	-
d	j	X	-	X	-	X	-	-	-	-	-	-	-	X	-	-
k	ka	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
kh	kha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
g	ga	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
gh	gha	X	-	-	-	X	-	-	-	-	-	-	-	X	X	X
	pha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
s	sa	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
s	sa	X	X	X	-	X	-	-	-	-	-	-	-	X	X	X
h	ha	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X

TABLE 5 (continued)

Phoneme	Grapheme	Educated						Uneducated						Regional		
		Formal	Informal	Upper Caste	Other Castes	Literacy	Colloquial	Formal	Informal	Upper Caste	Other Castes	Literacy	Colloquial	Coastal	Rayalaseema	Telangana
m	ma	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
n	na	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
n	na	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
l	la	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
l	la	X	-	X	-	X	-	-	-	-	-	-	-	X	X	X
r	ra	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
w	wa	X	_	X	-	X	-	X	-	X	-	X	-	X	X	X
y	ya	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X

7.4.3.1

Regional and social dialect variations of Telugu are presented in table form (Tables 5, 6 and 7). Presenting the information in this way makes for easy comparison and saves much repetition. The tables speak for themselves.

As most of the relevant features have been dealt with prosodically within the thesis, for ease of typing and to save space, phonological units are represented as phonemes in Table 5.

Table 6 (Page no. 405) deals with the phonetic features which are recognised by Krishnamurti (1957, 1962, 1977:cf.2.1.1), and their geographical distribution. The particular style, or styles, within a regional are also mentioned. Here in this table I have added the feature of the presence of borrowed vocabulary.

Table 7 (Page no. 406) deals with another set of features, and in this case I have also included caste as a sociolinguistic variable.

7.5.0

Phonological Systems of Telugu

As I mentioned in the earlier parts of this thesis (cf. 1.2.0), Firth (1948) suggests that for languages like Telugu it is necessary to assume two or three phonological systems. When he mentions non-brahmin Dravidian it includes the native phonological system and non-brahmin phonological system, as opposed to non-native (i.e., borrowed) phonological system and Brahmin phonological system. When he considers the Sanskrito-Dravidian phonological system, I am sure Firth had in mind the educated speakers who use Sanskrit forms in formal situations, and mixed Dravidian forms in informal situations. The third phonological system

that Firth proposes is Sanskritic, which I understand (and interpret) as a more formal or literary usage. It is very clear from these observations that Firth, much earlier than the present-day sociolinguists, projects the viewpoint of language as a complex system with several levels of usage.

A single sociolinguistic variable was chosen both by Krishnamurti and by Sjoberg for each presenting two different phonological systems. But I have demonstrated that two systems are not sufficient to accommodate all the variations that exist in present-day Telugu speech.

While adopting the Firthian philosophy of description of phonological systems, I deviate slightly from him in the sense that instead of presenting a single phonological system for each sociolinguistic variable, I present an abstract system (which is also known as 'common core'), and relate the systems of the regional and social dialects to it. As I have shown in the course of this thesis, for the standard form of Telugu as far as pronunciation is concerned, people look at written forms, i.e., the spelling pronunciation. An attempt on the part of the speaker to produce the spelling form accurately is what is considered as standard prununciation (cf. 7.4.0). Written language is something very prestigious and spelling pronunciation is the measurement for correct pronunciation. In this connection we are reminded of language psychologists' observations that 'a suggested written language could be made closer to ordinary spoken language but this is almost universally rejected by educated people.'

As the spelling pronunciation is considered to be the standard, I take the spelling form as the basis for my description of the Telugu phonological system. I present the abstract system (based on the spelling pronunciation) and show how a particular feature by its presence or absence in the system of a dialect exhibits the characteristic feature of a particular regional or

social dialect. For example, the presence of ఀ in the phonological system of the speaker indicates that the speaker is from the Coastal region. The absence of ^{h}CV indicates that the speaker is from a non-Brahmin social class. Instead of three terms in N system, if the speaker has only two terms, bilabial and dental (but not retroflex), it signals that the speaker is uneducated.

I am fully aware that phonological systems have not been presented in terms of prosodic phonology in this manner. It is my own innovation to handle dialect comparison, and I am sure this method should work well to describe the Telugu regional and social dialects. It makes it possible to show the samenesses and differences between the dialects. It is felt to be a useful technique in order to present the required comparisons.

7.5.1

The Common Core System

For syllable and word structure in terms of C and V, see Section 3.2.6. Here the systems at V and C places in structure are described.

7.5.1.1

Vowel Systems

A three-term vowel system is required to be set up to describe the abstract system, viz., ఒ , ఎ , అ . Their phonetic exponents are closeness of vowel, mid grade of vowel, and openness of vowel respectively. Other phonetic features like frontness, backness, rounding, absence of rounding, and short and long length are to be abstracted as word prosodies. Hence there is no need to include those features under V systems.

ᑕ = functions in w or y prosodic syllables, the exponents being [u] and [i].

ᕮ = functions in w or y prosodic syllables, the exponents being [o] and [e].

ᐊ = functions in w or y prosodic syllables, the exponents being [a] and [æ] respectively.

ᑕ, ᕮ function with the length prosodies, long and short: ᑌ, ᕮ

ᐊ with w prosody functions with long and short length, but with y prosody only with long length, ᐊᐩ.

The Coastal dialect has the same V systems as the abstract system. The Telangana and Rayalaseema dialects have the V systems as in the abstract system, apart from ᐊᐩ . ᐊᐩ marks vowel harmony and Sandhi in the Rayalaseema dialect. The Telangana dialect has no ᐊᐩ even in such situations. Examples are given below:

Spelling Pronunciation	Coastal	Rayalaseema	Telangana	Gloss
uli ᑌᒪᐩ	uli ᑌᒪᐩ	uli ᑌᒪᐩ	uli ᑌᒪᐩ	'chisel'
pulla ᑭᑌᒪᒪᐊᓐ	pulla ᑭᑌᒪᒪᐊᓐ	pulla ᑭᑌᒪᒪᐊᓐ	pulla ᑭᑌᒪᒪᐊᓐ	'sown'
u:ru ᐌᓐᒪᓐ	u:ru ᐌᓐᒪᓐ	u:ru ᐌᓐᒪᓐ	u:ru ᐌᓐᒪᓐ	'village'
oka ᕮᓐᑕᐊᓐ	oka ᕮᓐᑕᐊᓐ	oka ᕮᓐᑕᐊᓐ	oka ᕮᓐᑕᐊᓐ	'one'
ko:ta ᑕᕮᓐᑕᐊᓐ	ko:ta ᑕᕮᓐᑕᐊᓐ	ko:ta ᑕᕮᓐᑕᐊᓐ	ko:ta ᑕᕮᓐᑕᐊᓐ	'fort'
kala ᑕᐊᓐᑕᐊᓐ	kala ᑕᐊᓐᑕᐊᓐ	kala ᑕᐊᓐᑕᐊᓐ	kala ᑕᐊᓐᑕᐊᓐ	'dream'

Spelling Pronunciation	Coastal	Rayalaseema	Telangana	Gloss
ka:lu	ka:lu	ka:lu	ka:lu	'leg'
gela	gela	gela	gela	'bunch of fruits'
pe:du	pe:du	pe:du	pe;du	'bark of a tree'
ginne	ginne ~ ginni	ginna	ginna	'metal vessel'
gi:ta	gi:ta	gi:ta	gi:ta	'line'
pe:ka	pæka	pe:ka	pya:ka	'playing cards'
wacca:ḍu	wa C Cæ:ḍu	wa CC ina:ḍu	wa CC indu	'he came'

The exponent of ɛ in a y prosodic syllable varies in quality between open mid [ɛ] and close mid [e]. Coastal dialect has the more open quality, Telangana the more close, and in Rayalaseema, syllables with C onset have the more close quality and V onset, the more open quality.

7.5.1.2

Consonant Systems

The C systems of the abstract phonological system are P, N, L, G, S, F. These systems occur in C places in word-initial and syllable-initial position, and also in syllable-final position, but not in word-final position. The systems that can occur in word-initial clusters are mentioned in Section 3.2.6.1.

P System

The P system has five terms and functions in v/v onset syllables and h/h syllables

The terms are p^4 (exponent labial); t (exponent apical); t_t (exponent retroflex); c (exponent palatal); k (exponent velar). h/h prosodies are associated with v/v as follows.

h,v CV exponent breath and voice at syllable onset Ex. bhakti 'devotion'

h,v CV exponent breath and voicelessness at syllable onset Ex. phalaŵ 'fruit'

h,v CV exponent absence of breath, presence of voice at syllable onset ex. bali 'sacrifice'

h,v CV exponent absence of breath and voice at syllable onset ex. palu 'many'

The presence of the P system in h prosodic syllables is a caste marker. Only the Brahmin speakers have it as part of their system. However, educated speakers of other castes try to produce this feature in formal speech. This may be identified as their loyalty to the spelling pronunciation.

The term t of the P system in h,v prosodic syllable onsets (exponent [th]) is functional in the Rayalaseems dialect, but not in the Coastal and Telangana dialects, where the term is found only in h,v prosodic syllables (exponent [dh]). Thus the Rayalaseema dialect is the only one to have the t term in the P system in a h,v prosodic syllable. However [th] is still represented in the spelling. The Rayalaseema dialect also has another feature which clearly sets it apart from the other dialects. The P_t phonetic exponent in Rayalaseema dialect is alveolar, whereas in the case of others it is dental.

Uneducated speakers of the Coastal and Rayalaseema dialects and all the educated speakers in general have a tendency to use aspiration (abstracted as h prosody) as a marker of emphasis. Brahmin speakers use it to a higher degree.

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4. The p term is used to illustrate the contrasts.

N System

The N system has three terms - p, t, ʈ.

Examples:

	Spelling Pronunciation	Gloss
$N_{ʈ}$VCVCV	nalupu	'black'
$N_{ʈ}$VCV	nela	'mouth'
N_{p}VCV	moga	'man'
N_{t}VCV	meɖa	'neck'
C$\bar{V}N_{ʈ}$V	ra:ɳi	'queen'
V$N_{ʈ}$V	aɳa:	'an obsolete coin'

The term ʈ does not function in word-initial syllable position, but can occur in syllable-initial positions elsewhere.

The term p is realised in intervocalic and word-final positions as [w̃] in the case of all speakers, other than those of the Telangana dialect. In Telangana speech it is realised as a nasal stop [m].

The term ʈ belongs to the socio-cultural arena of speakers. It is not generally found in uneducated speech. And just because a retroflex nasal is represented in the orthography, it is not true to say that all educated speakers make use of one in their speech. Recently Radhakrishna (in a review of Grammar of Modern Telugu by Krishnamurti and Gwynn, 1985) pointed out that unexpected forms with retroflex nasals, like vaɳɳam occur in uneducated speech, but makes no further comment. The reason for such forms getting into uneducated speech is considered by me in Section 7.6.0.

If the N system of a speaker has three terms, p, t, ʈ, it may be concluded that the speaker is exposed to certain socio-cultural influences. If the speaker's system has only two terms, namely p and t, it is certain that the speaker is uneducated and away from the socio-cultural influences; for cases of incorrect usage see Section 7.6.0.

L System

The L system has three terms - r, t, ṭ.
The terms r, t occur word initially and medially.
The function of the term ṭ is parallel to the function of the term ṭ of the N system, described above. The term ṭ does not function in word-initial position. As stated elsewhere (cf. 3.2.6), it can occur in syllable-initial position. In most of the cases when it occurs in morphological junctions, it is found where an alveolar lateral has harmonised with a preceding voiced unaspirated dental stop, retroflex stop, alveolar nasal, or a voiced alveolar roll. This is discussed under Sandhi (cf.6.2.2). Examples are:

Noun + pl. Suffix	In Conventional Spelling and in Telangana Speech		In Modern Spelling Reflecting Current Usage		Gloss
kannu + lu	kanlu	$CVNL_tV$	kaḷḷu	$CVLL_{\underline{t}}V$	'eyes'
	kaṇḍlu	$CVNPL_tV$			
paṇḍu + lu	paṇḍlu	$CVNPL_tV$	paḷḷu	$CVLL_{\underline{t}}V$	'fruits'
	Panlu	$CVNL_tV$			
u:ru + lu	u:rlu	$\bar{V}L_rL_tV$	u:ḷḷu	$\bar{V}LL_{\underline{t}}V$	'villages'
	u:lru[5]	$\bar{V}L_tL_rV$			
go:ru + lu	go;rlu	$C\bar{V}L_rL_tV$	go:ḷḷu	$C\bar{V}LL_{\underline{t}}V$	'nails'
	go:lru[5]	$C\bar{V}L_tL_rV$			

In the case of Telangana speakers, we observe that the structure and systems are those of the traditional spelling pronunciation, i.e., the abstract system. The modern spelling is not yet popular with Telangana speakers, at least in the case of -ḷḷ-. In the case of modern spelling with -ḷḷ-, Telangana speakers have a tendency to pronounce dental sounds, and hence they will have $-LL_t$ instead of $LL_{\underline{t}}$ in their system.

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5. These are metathesised forms occurring in Telangana speech.

G System

The G system has two terms, p and c: G_p (phonetic exponent being labial glide[w]; G_c (phonetic exponent being palatal glide[y].

G_c is present in the speech of all the speakers of Telugu, both in word-initial and medial positions. The presence of G_p in the phonological system for a speaker is an 'act of identity', i.e., the speaker exhibits that he has some socio-cultural background and some status in the society. I call it 'sophisticated speech'. As mentioned in Section 2.2.5, this is not a feature to bring to light the educational background of the speaker, and the absence of it may indicate the speaker's lack of social contacts. I call it 'unsophisticated speech'. See the following data where initial [w] is considered.

Spelling Pronunciation and Sophisticated Speech	Social Variant Form (Unsophisticated Speech)	Gloss
wenaka	jenaka	'behind'
$G_p E^y$ CVCV	j_{E^y} CVCV	
wendi	jendi	'silver'
$G_p E^y$ CCV	j_{E^y} CCV	
we:sa:lu	jæsa:lu	'actions'
$G_p \bar{E}$ C$\bar{V}$ CV	$j_{\bar{\alpha}^y}$ C$\bar{V}$ CV	
wipari:tam	jipari:taw̃	'excessive'
$G_p i^y$ CVC$\bar{V}$ CVN	j_{i^y} CVC$\bar{V}$ CV^{nw}	
wida:kulu	jida:kulu	'divorce'
$G_p i^y$ C$\bar{V}$CVCV	j_{i^y} C$\bar{V}$ CVCV	
wi:pu	ji:pu	'back'
$G_p \bar{i}^y$ CV	$j_{\bar{i}^y}$ CV	

Let us now look at certain word-medial [w] examples.

Spelling Pronunciation and Sophisticated Speech	Social Variant Form (Unsophisticated Speech)	Gloss
ma:wiḍi	ma:yiḍi	'mango'
awi	ayi	'those' (pronoun)
ba:wi	ba:yi	'well'

From the data it is clear that in unsophisticated speech they have only one term for both G_p and G_c before front vowels. Before back vowels they have retained the distinction.

na:wi	na:yi	'mine'
re:wu	re:wu	'port'

(see also 2.2.5).

S System

The S system has three terms - t, ṭ and ṯ.

The term ṯ functions mostly in Sanskrit borrowings. The same is true of the term ṭ. Only the term t is native to the Telugu system.

In the educated speech of the Coastal area only two terms are found in the S system, namely t and ṭ.

In the educated speech of Telangana t and ṭ are also the two terms of the S system.

In the educated speech of Rayalaseema there is evidence to show that the speakers are moving towards the spelling pronunciation, but it is noted that the palatal sibilant is observed only before front vowels and not before back vowels. In cases of occurrence before back vowels, the retroflex sibilant is used. The S system is therefore a two-term system as in the other two dialects.

Uneducated speakers in general have only one term in the S system, namely t (phonetic exponent being dental). The dental sibilant in uneducated speech results from two sources, viz.: (1) the three term - t, ṭ, c - system of the spelling pronunciation which is observed in the formal speech of educated speakers, is reduced to one dental sibilant in uneducated speech; and (2) the word-initial and medial palatal affricate [tɕ][6] loses the stop quality, and this results in a dental sibilant.

Uneducated Brahmin speakers, however, consider the use of [ʂ] as a prestige marker, and some amongst them try to retain it.

F System

There is only one term - p.

[f] is a borrowed sound in Telugu. The Telugu orthography does not provide a separate symbol for it. The symbol that is used for [ph] is also used for the labio-dental fricative. In the same way as aspiration has been noted as a caste marker (cf. 2.2.3.1), this sound is not used by uneducated speakers and non-Brahmin speakers in their phonological system, so the presence or absence of the fricative is a useful sociolinguistic marker. The presence of the F system in the phonological system has the following features of sociolinguistic importance:

i) Uneducated speakers do not have F in their system; this is because [f] is a borrowed sound; if used, it is used incorrectly (see 7.5.1 on hyper forms).

ii) Non-Brahmin educated speakers do not have F in their system as they equate [f] with an aspirated plosive; both sounds being represented by the same symbol ఫ [Ph] in the Syllabary.

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6. It was thus previously in P System.

iii) Uneducated Brahmin speakers do have a tendency to substitute [f] for [ph] in Sanskrit loans, so have F in their system.

Examples:

Sanskrit Form	Spoken Form	Gloss
phalam	falaw̃	'result, fruit'
$\underline{hv}PVCVN$	$\underline{h}\underline{v}FVCV^{nw}$	
kapham	kafaw̃	'phlegm'
$CV\underline{hv}PVN$	$CV\underline{hv}FV^{nw}$	

iv) Uneducated Brahmins, in borrowed non-Sanskrit vocabulary substitute [ph] for [f], so in such cases the words have the P system instead of the F system.

ma:fi:	ma:phi:	'exemption'
$N\bar{V}\underline{hv}F\bar{V}$	$N\bar{V}\underline{hv}P\bar{V}$	
ka:fi	ka:phi:	'coffee'
$C\bar{V}\underline{hv}FV$	$C\bar{V}\underline{hv}P\bar{V}$	

In the examples in (iii) and (iv) the prosodic marking $\underline{hv}$ is used to show that the syllable onset prosodies are unchanged when the P systems and F systems are changed. It may be noted also that something of the labial character remains, bilabiality in the P systems and labio-dentality in the F systems.

7.5.1.3

Prosodies

Syllable Prosodies	Junction Prosodies
h and $\underline{h}$	v and j
v and $\underline{v}$	h and $\underline{h}$
w and y	

w and y prosodies have been dealt with in the account of V systems. h/h and v/v prosodies have been considered together with C systems. h/h syllable prosodies are relevant to syllables with P onset and V onset. Those with P onset have been dealt with already, the ones with V onset are dealt with below.

7.5.1.4

Junction Prosodies

h/h, v and j.

These prosodies link syllables with V ending and V onset. v and j prosodies are also markers of V onset in word syllable initial. The presence of v and j prosodies in word-initial syllable is a marker of education. Educated speakers generally have the respective onglides before front and back vowel word-initial forms. (ref 2.2.5)

h prosody is maintained by educated speakers in word-initial and medial positions. Uneducated speakers do not have it. This is relevant to all the regional dialects.

Examples:

Spelling Pronunciation	Educated Speech	Uneducated Speech	Gloss
haddu	haddu	addu	'limit, border'
$^{h}\alpha^{\omega}$ CCV	$^{h}\alpha^{\omega}$ CCV	$^{h}\alpha^{\omega}$ CCV	
hakku	hakku	akku	'right'
$^{h}\alpha^{\omega}$ CCV	$^{h}\alpha^{\omega}$ CCV	$^{h}\alpha^{\omega}$ CCV	
salaha:	salaha:	sala:	'advice'
CVCV$^{h}\bar{\alpha}^{\omega}$	CVCV$^{h}\bar{\alpha}^{\omega}$	CV C$^{h}\bar{\alpha}^{\omega}$	

TABLE 6 : Table Showing Regional Variations-Distinguishing Features

S.No.	Features	Coastal Dialect				Rayalaseema Dialect				Telengana Dialect			
		Formal	In-formal	Educated	Un-educated	Formal	In-formal	Educated	Un-educated	Formal	In-formal	Educated	Un-educated
1.	h/hp distinction	X	-	X	-	X	-	X	-	-	-	-	-
2.	Presence of [h] in word-initial and medial position	X	X	X	-	X	-	X	-	-	-	X	-
3.	Presence of [w] in word-initial and medial position	X	-	X	-	-	-	X	-	-	-	X	-
4.	Presence of affricates	X	-	-	-	X	-	-	-	-	-	-	-
5.	Retention of cluster consonants	X	-	X	-	X	-	X	-	-	-	X	-
6.	Distinction of three sibilants	-	-	X	-	-	-	-	-	-	-	-	-
7.	Presence of fricative [f]	X	-	X	-	X	-	X	-	-	-	X	-
8.	Distinction of	X	-	X	-	-	-	X	-	-	-	-	-
9.	Presence of [æ]	X	-	X	-	-	-	X	-	-	-	-	-
10.	Presence of borrowed vocabulary from 1) English 2) Urdu 3) Mixture of both English & Urdu 4) High-flown Telugu	(4)	-	(1)	-	-	-	(3)	-	(2)	-	(3)	-

TABLE 7 : Table Showing the Regional Variations - including Caste

S.No.	Features	Coastal Dialect						Rayalaseema Dialect						Telangana Dialect					
		Educated	Uneducated	Formal	Informal	Upper Caste	Other Caste	Educated	Uneducated	Formal	Informal	Upper Caste	Other Caste	Educated	Uneducated	Formal	Informal	Upper Caste	Other Caste
1.	Word-initial stress	X	-	X	-	X	-	X	-	X	-	X	-	X	-	-	-	-	-
2.	Emphatic stress-aspiration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.	Vowel harmony (regular)	X		X		X		X	-	X	-	-	-	-	-	-	-	-	-
4.	Vowel harmony (irregular)	-	X	-	-		X	-	X	-	-	-	X	-	-	-	-	-	-
5.	Internal Sandhi (by deletion of unstressed syllable)	-	X	-	X	-	X	-	X	-	-	-	X	X	X	X	X	X	X
6.	Sandhi (regular)	X	-	X	-	X	-	X	-	X	-	-	-	X	-	-	-	-	-
7.	Hyper forms	-	-	-	X	-	X	X	X	-	X	-	X	X	X	X	X	X	X
8.	Emphatic stress-prolonged contact at the time of consonant release	-	X	-	X	-	X	-	X	-	X	-	X	X	-	-	-	-	X

7.6.0

Uneducated Speech - Hyper Forms

Uneducated speakers are fully aware that certain phonetic features are lacking in their speech. In order to cover the gap they create forms which do not, in fact, have such features in normal speech. These features which are markers of uneducated speech, are considered under three headings, viz., (i) aspiration; (ii) retroflexion, and (iii) initial [w], an approximant.

i) Aspiration

This feature is used for 'emphasis'. In the so-called standard speech or spelling pronunciation, it is limited solely to the plosive series, both voiced and voiceless. But in the aspiration used by uneducated non-brahmin speakers for emphasis, it is also found with other consonants, for example, with laterals.

Examples:

Spelling Pronunciation	Uneducated Speech	Gloss
ga:li	[g^{h}a:li]	'wind' (emphatic)
$C\bar{V}CV$	$^{h}vC\bar{V}CV$	
ca:la:	[ca:l^{h}a:]	'so many' (emphatic)
$C\bar{V}C\bar{V}$	$C\bar{V}\,^{h}L_{t}\bar{V}$	

ii) Retroflexion

The retroflex nasal, lateral and sibilant are introduced in non-brahmin uneducated speech for the reason that they are aware that the feature is a marker of prestige, but at the same time they are unaware of appropriate usage. So, in cases where educated speakers have non-retroflex forms, the non-brahmin uneducated speakers may use retroflexes. It is not correct to say that the non-brahmin uneducated speakers use retroflex [ɳ] in all places where others have [n]. The lexical items which they consider as more prestigious will be chosen

for this process. Uneducated brahmins do not create hyper forms of this sort. The following examples show a difference in terms of N, L and S systems between educated and uneducated speech.

	Educated	Uneducated	Gloss
n → ɳ	annam	waɳɳam	'cooked rice'
	ka:ni:	ka:ɳi	'an obsolete coin equal to 1/64th of a rupee'
	enabhay	eɳabhay	'eighty'

These and other such examples reflect the difference of terms in the N system. The term ɳ functions in place of t.

s → ʂ	vi:sam	vi:ʂam	'a measure of weight'
	pusi	puʂi	'white substance from the eye'

These and other such examples reflect the difference of terms in the S system. The term ʂ functions instead of t.

l → ɭ	malupu	maɭupu	'turning'
	golusu	goɭusu	'chain'

These and other such examples reflect the difference of terms in the L system. The term ɭ functions instead of t.

In educated speech [ɖ] appears in word-initial position and in word-medial position in gemination or clusters. Intervocalically a retroflex flap is used. In uneducated speech a retroflex lateral [ɭ] is used in this context.

Educated	Uneducated	Gloss
paɣaka	paɭaka	'bed'
CVɣ̰VCV	CVɭ̰VCV	
ko:ɣi	ko:ɭi	'hen'
CV̄ɣ̰V	CV̄ɭ̰V	

The L system is used in uneducated speech where educated speech has the P system.

In the Chittoor and Anantapur dialects of Rayalaseema [ɳ] is used in word-medial positions in gemination by all speakers. This is due to the effect of neighbouring languages.

Other Areas	Rayalaseema	Gloss
anna	aɳɳa	'elder brother'
VNN̰V	VNɳ̰V	
kannu	kaɳɳu	'eye'
CVNN̰V	CVNɳ̰V	

iii) Labiodental glides and palatal glides are used as onsets before back and front rounded vowels respectively in brahmin and non-brahmin speech. I treat them as syllable-initial prosodies (cf. 7.5.1.3). This feature is also considered as a prestige marker. Hence uneducated speakers have a tendency to use labiodental glides in places where they are not required, particularly where the first syllable begins with the vowel [a], [i] or [e], for example.

Prosody

The Normal Form	Hyper Form Created	Gloss
annam	vaɳɳam	'cooked rice'
ɑʷCCVC	ᵛɑʷCCVC	
ippuḍu	vippuḍu	'now'
ʲiᵘCCVCV	ᵛiᵘCCVCV	

The Normal Form	Hyper Form Created	Gloss
ippa	vippa	'country liquor'
ɲ ی cc v	ʋ ی cc v	
enda	venda	'Sunlight'
ɲ ɛ cc v	ʋ ɛ cc v	

TABLE 8 : Confirmatory 1986 Data from Andhra Pradesh:
Social and Regional Variables checked against Forty-three Subjects

	Educated Brahmin	Educated Non-brahmin	Uneducated Brahmin	Uneducated Non-brahmin	Total
Coastal Dialect					
1. Annavaram Pithapuram (W.G. Dist.)	1	1	1	1	4
2. Kakinada (E.G. Dist.)	1	1	1	1	4
3. Nearby villages of Kakinada	1	1	1	-	3
4. Visakhapatnam (Dt.)	1	1	1	1	4
5. Guntur (Dt.)	2	2	2	2	8
6. Vijayawada (Krishna Dt.)	1	1	1	1	4
Rayalaseema					
7. Tirupati (Mittoor Dst.)	1	1	1	1	4
8. Cuddapah (Dt.)	1	1	1	1	4
Telangana					
9. Warangal (Dt.)	1	1	1	1	4
10. Mahbootnagar (Dt.)	1	1	1	1	4
TOTAL	11	11	11	10	43

CHAPTER EIGHT

CONCLUSIONS

8.0.0

The major aims of the thesis have been to present phonological systems of Telugu in relation to social and regional variables, and to do this in terms of prosodic phonology. This is something that has not been attempted before, and is thus a new contribution to the understanding of Telugu phonology.

8.1.0

In the first chapter, Introduction, I have presented a brief historical account of how regional dialects have emerged in Telugu with their different backgrounds. I have also discussed the roles of education and social structure of the society in paving the way towards a standard language. Telugu speakers continue to exist as a unified linguistic and political entity, in spite of regional and social variations.

8.2.0

In the second chapter of the thesis I have demonstrated how in earlier studies scholars set up phonemic systems taking into account only one sociolinguistic variable or another (and some taking none at all), instead of considering the interplay, and thus failed to take into account the various usages of the language. If, for instance, the sociolinguistic variable of education alone is taken into consideration, it is not possible to account for the loss of certain features in educated speech. Such lacunae are often due to some other variable operating simultaneously. Tables 5, 6 and 7 show how the different social variables relate linguistically to each other and to the different regional variations.

This evidence is the basis for my argument that there is no form at present for anything that can be called 'standard Telugu'.

8.3.0

The third and fourth chapters of this thesis deal mainly with the prosodic systems. In Chapter Three I have dealt with stress and syllable structure. The fact that 'stress' has been a neglected area of study hitherto, is an indication of how little has been understood of prosodic forms of the language. My study is the first to take stress into account. Stress is examined in relation to word and syllable structure and it has been shown how taking stress into account can explain loss of syllable nuclei and consequent changes in phonological structure. Furthermore, taking stress into account makes possible much neater and more economical descriptions of vowel harmony and Sandhi phenomena. Consideration of stress has also enabled me to give a clearer account of compound word formation and the rhythm of compound words. I have proposed a set of nine rules for stress in Telugu, which covers the nominal and verbal suffixes and stems. These rules operate in such a way that some of the differences in speech (which are attributed to differences in regional or social background of the speakers) can be explained.

8.4.0

The notion of rhythm which accounts for the regional variations is discussed in the fourth chapter. I have shown the rhythmic patterns used in the Coastal area and different rhythm in the Telangana area. I am conscious that intonation plays a considerable role in the demarcation of the dialects, but aside from some passing remarks here and there, no scholar

has yet attempted to describe intonation in Telugu. It requires an enormous amount of data and careful analysis to present a theory of intonation. Due to a dearth of appropriate data and shortage of time, I have not ventured upon it. Intonation thus falls beyond the scope of this thesis.

8.5.0

In the fifth chapter, after making a survey of earlier work in the field, I have presented my own analysis of vowel harmony in Telugu. This, being the area where prosodic functions are considered, establishes not only the patterns of vowel harmony amongst so-called 'standard language' speakers, but also the differences based on regional and social variations. Earlier studies give more rules for vowel harmony than are necessary, and through the use of prosodic theory I have been able to reduce the number, and, I believe, have presented a more complete picture of the phenomenon.

8.6.0

The sixth chapter deals with the highly traditional but loosely defined topic 'Sandhi'. Stress patterning, the importance of which I recognised, and which I dealt with in detail in Chapter Three, is taken into account here to describe Sandhi rules. It is also shown how the Sandhi rules of earlier scholars are needlessly cumbersome.

8.7.0

In the seventh chapter I look at the existing situation in Telugu and the absence of a standard language due to social and regional variations. After considering Ferguson's theory of diglossia and Fishman's model for

the same, I also consider the latest in the series offered by Fasold, which will cover most of the aspects of the present-day situation in Telugu. Scholars hold the view that standard pronunciation is acquired through education. Following Le Page, I recognise the 'acts of identity' which speakers assume in order to exhibit their social awareness. I also propose a set of indices for a standard Telugu on the lines of Labov, and try to identify how far the process of standardisation is moving forward.

8.8.0

Faced with the complex linguistic situation of Telugu, I attempt an analysis of the phonological system of the language within the framework of prosodic phonology. The proponents of prosodic theory envisage a polysystemic approach to phonological systems. I agree with this, but because I am concerned with comparison my presentation involves some innovation. Instead of proposing different phonological systems for different regional and social dialects, at the outset I establish a 'core' phonological system and then relate the different regional and social systems to it. The core system[1] is based on the spelling pronunciation, which is considered to be the standard by many. This method has the practical advantage of saving repetition and space in presenting the descriptions. Furthermore, as I observed in Section 1.2.1, language is not a watertight compartment and language seepage takes place in all the social situations, and an analysis needs to be able to handle this. The common core phonological system that I offer is able to accommodate all the features, whether they belong to regional dialects or to social dialects or to both. It can also show in which direction the speakers are moving, i.e., whether towards standardisation of the language or away from it. This is one of the advantages of my method.

1. This differs from the core systems of scholars reviewed earlier in that their core system was based on educated speech of one dialect or the formal speech of one dialect.

8.9.0

Standard pronunciation is widely considered to be the same as spelling pronunciation. Speakers are considered to be standard speakers if they retain all the features of the spelling pronunciation. Sometimes we find in the data certain examples where speakers cross the sociolinguistic barriers and move towards standard pronunciation. For example, if an uneducated speaker makes use of [ɳ, ɭ] and [ʂ] in his speech, it is no surprise. We may have to concede that owing to his sociocultural movements he is able to operate in three terms of N instead of two, and two terms of L instead of one, and two terms of S instead of one. As such there is no standard Telugu. He is trying to move towards spelling pronunciation. A phonological description in terms of prosodic phonology will enable us to identify this trend.

In writing this thesis I have tried to make available in one volume as full an account as possible of previous work done on Telugu phonology, together with a discussion of the relevant theoretical questions. This is not only for the purpose of providing a background for my own analysis, but also to provide a readily available starting point for further work on Telugu phonology. I hope that my own approach of taking into account the different variables of region, education, caste and style and their interrelations will provide a useful lead for further research.

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